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Final Environmental Impact Statement and Proposed California Desert Conservation Area Plan Amendment for the Proposed Chevron Energy Solutions Lucerne Valley Solar Project

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Volume II: Appendices A to G

August 2010

Prepared for:

BUREAU OF LAND MANAGEMENT
BARSTOW FIELD OFFICE

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FINAL

Environmental Impact Statement
and
Amendment to the California Desert Conservation Area Plan
Lucerne Valley Solar Project
San Bernardino County, California

Public Scoping Summary Report

October 9, 2009

United States Bureau of Land Management

Prepared for

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Lucerne Valley Solar Project
Final Public Scoping Summary Report

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Abbreviations and Acronyms Used in this Report

BLM	Bureau of Land Management
CDCA	California Desert Conservation Area
CES	Chevron Energy Solutions
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DEIS	Draft Environmental Impact Statement
EEMP	Equipment Emission Mitigation Plan
EIS	Environmental Impact Statement (NEPA)
FLPMA	Federal Land Policy and Management Act
GhG	Greenhouse Gas
kV	kilovolt
LVEDA	Lucerne Valley Economic Development Association
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGO	Nongovernmental Organization
NHPA	National Historic Preservation Act
NOI	Notice of Intent
OHV	Off-Highway Vehicle
PV	Photovoltaic
ROW	Right-of-Way
SCE	Southern California Edison
TMDL	Total Maximum Daily Load
WEMO	West Mojave Plan
WOUS	Waters of the United States

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1.0 INTRODUCTION

In compliance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the Federal Land Policy and Management Act of 1976 (FLPMA), as amended, the U.S. Department of the Interior, Bureau of Land Management (BLM) is preparing an Environmental Impact Statement (EIS). The purpose of the EIS is to identify potential effects that may occur with the construction, operation and maintenance, and decommission and restoration of the proposed Chevron Lucerne Valley Solar Project (the project). The project would be located approximately 8-miles east of Lucerne Valley in rural San Bernardino County, California. Chevron Energy Solutions (CES), a Chevron subsidiary, proposed the project and requested a right-of-way (ROW) authorization from the BLM to construct and operate a 45 megawatt (MW) solar photovoltaic (PV) energy generation facility and connect it to the existing Southern California Edison (SCE) 33-kilovolt (kV) distribution system.

The BLM has completed the public scoping phase of the project to help define the issues, impacts, and potential alternatives that will be analyzed in the EIS. Scoping is an early phase of the NEPA review process and is used to focus the environmental analysis and incorporate issues identified by the public into the analysis. This report summarizes the activities conducted during scoping, includes comments received during the scoping period, and indicates how the BLM will address specific comments in the EIS. The BLM will use the comments received during the scoping period to:

- Identify key issues to focus the analysis;
- Identify reasonable alternatives for analysis;
- Present environmental impacts of the project and alternatives;
- Identify ways to avoid or reduce environmental impacts;
- Inform the agency decision-making process; and
- Encourage public participation.

1.1 Purpose and Need

The BLM is responding to a CES application for a ROW grant to construct, operate, maintain, and decommission a 45 MW thin-filmed solar PV facility on BLM lands, and after decommissioning, restore the land under Title V of the Federal Land Policy and Management Act of 1976 (43 U.S. Code 1761). The Energy Policy Act of 2005 (Public Law 109-58), signed by President Bush on August 8, 2005, and BLM's Solar Energy Development Policy, which was issued on April 4, 2007, establish a framework to process applications for ROW and directs the BLM to be responsive to solar energy project applicants while protecting the environment. Section 211 of the Energy Policy Act called for the approval of 10,000 MWs of non-hydropower renewable energy generation on public lands within 10 years of the Act (Public Law 109-58 2005). The California Desert Conservation Area (CDCA) Plan and the Federal Land Policy Management Act of 1976 both recognize that the CDCA will be managed for multiple uses.

Federal participation is supported by the Secretary of the Interior's Secretarial Order No. 3285 (March 2009) directing all Department of the Interior agencies and departments, including the BLM, to encourage the timely and responsible development of renewable energy, while protecting and enhancing the Nation's water, wildlife and other natural resources.

The BLM will take into consideration the provisions of the Energy Policy Act of 2005, Secretarial Orders 3283 *Enhancing Renewable Energy Development on the Public Lands* and 3285 *Renewable Energy Development by the Department of the Interior* in responding to the CES application. Approval of the project also will require a land use plan amendment to the CDCA Plan (BLM 1980).

If the BLM decides to approve or deny issuance of a ROW grant to CES, BLM's actions may also include amending the CDCA Plan concurrently. For the decision to be made, the BLM will decide whether or not to grant a ROW, and if so, under what terms and conditions.

1.2 Description of CDCA and WEMO Plans

The CDCA Plan encompasses 25-million acres of land in Southern California designated by Congress in 1976 through the FLPMA. Congress directed the BLM to prepare and implement a comprehensive, long-range plan for the management, use, development, and protection of public lands within the CDCA. The CDCA Plan is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality (BLM 1980). The CDCA Plan provides overall regional guidance for management of the public lands in CDCA and establishes long-term goals for protection and use of the California desert.

The CDCA Plan establishes four multiple use classes, multiple use class guidelines, and plan elements for specific resources or activities such as motorized-vehicle access, recreation, and vegetation. The multiple use classes are defined as follows:

- Class C (Controlled Use)
- Class L (Limited Use)
- Class M (Moderate Use)
- Class I (Intensive Use)

The CDCA Plan established a network of 16 utility planning corridors across the Mojave and Colorado Deserts. Each corridor is 2- to 5-miles wide. The intent of the corridors is to provide a delivery system network that meets public needs in a manner that minimizes the proliferation of widely separated ROWs by encouraging the joint use of corridors for utilities. To accommodate those instances when a utility may require locating outside of a "planned" utility corridor, several "contingent" corridors were identified by the CDCA plan that could be activated through a CDCA plan amendment.

The CDCA Plan also included a Motorized-Vehicle Access Element that designates all public land in the California Desert as “open (roads are not required for vehicle use),” “closed (no vehicles allowed),” or “limited (vehicles must stay on roads)” for vehicle use, based on BLM’s multiple-use classes (BLM 1980). In “open areas” travel is permitted anywhere within the area if the vehicle is operated responsibly in accordance with regulations (BLM 1980).

The West Mojave Plan (WEMO) was established in 2006 and is composed of a federal component that amends the CDCA Plan of 1980; and a Habitat Conservation Plan component that covers State and local government actions (BLM 2006). WEMO presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel and nearly 100 other sensitive plants and animals and the natural communities of which they are a part, and provides a streamlined program for complying with the requirements of the Federal and California Endangered Species Acts.

1.3 Description of the Project

Proposed Photovoltaic Solar Plant: CES has applied for a BLM ROW authorization to construct and operate a 45 MW, PV power plant. The solar plant would produce electrical power using solar PV arrays comprised of several PV panels. Each panel would measure about 40 inches by 55 inches, depending on the manufacturer. Two of these panels would be placed in portrait orientation (i.e., with the long axis oriented vertically) on a south facing rack tilted at a 20- to 25-degree angle from horizontal. Each panel would have a maximum power output of 135 watts. This solar plant would be connected to an existing 33-kV distribution system adjacent to the project site.

The project site would be located on approximately 516 acres of federal land managed by the BLM. The project site is in the County of San Bernardino, California, approximately 8-miles east of the junction of Barstow Road and Old Woman Springs Road in Lucerne Valley (Figure 1). The site is bounded by Foothill Road on the north and Santa Fe Fire Road, a BLM open route, traverses the site in a north-south direction. A portion of Zircon Road, a BLM open route, traverses the eastern portion of the project site. This segment of Zircon Road would be realigned outside the project boundaries as part of the project, but would remain designated as an “open” motorized vehicle access route.

Within the proposed ROW, the solar field, control and maintenance building, and the switchyard would occupy nearly the entire site. About 90 percent of the area will be used for the solar panels, and the remaining area would be used for roads, power lines, switchyard, a control/maintenance building and a parking area.

The project would be constructed in two phases. Phase I of the project would consist of up to 180,000 PV panels with a generating capacity of 20 MW. Phase II, with a generating capacity of 25 MW, would be similarly configured.

Proposed CDCA Plan Amendment: The project site is managed in accordance with the CDCA Plan and the WEMO. The project also requires an amendment to the CDCA Plan to reroute a portion of Zircon Road outside the project boundaries.

1.4 NEPA Requirements

Scoping is the coordination and consultation process required under NEPA regulations to ensure that interested parties are allowed a forum to provide input on the issues to be analyzed in the environmental document. This process ensures that significant public issues, alternatives, and impacts are addressed in environmental documents, and determines the scope and degree to which these issues and impacts will be analyzed. Scoping is required by the Council on Environmental Quality (CEQ) 1979 regulations (40 Code of Federal Regulations [CFR] 1501.7). Public involvement early in the scoping process is the first step in providing a solid foundation for all project activities.

The following interested parties were invited to participate in scoping:

- Federal agencies;
- State agencies;
- County agencies;
- City agencies;
- Affected tribes;
- Affected communities
- Businesses;
- Interested non-governmental organizations; and
- Interest individuals.

One of the mechanisms to ensure that input from the parties listed above is included in the environmental document is for the lead agencies to hold scoping meetings early in the NEPA process. Although the scoping period is 30 days, it is not the only time in which interested parties can comment on the environmental document. A similar process will begin as soon as the draft environmental document is released. In addition to providing comments on the Draft EIS analysis at that time, the public will be able to comment on the adequacy of how their scoping comments have been addressed in the environmental document.

2.0 DESCRIPTION OF THE SCOPING PROCESS

The 30-day scoping period for the project was from July 23, 2009 to August 22, 2009, and commenced with publication of the Notice of Intent (NOI) in the *Federal Register* (see Appendix A). The NOI announced a period for public scoping of alternatives, issues, impacts and planning criteria that would be used in CDCA Plan amendment. The NOI also requested the views of other agencies as to the scope and content of the environmental information that was germane to the statutory responsibilities or areas of expertise for those agencies. Federal, state, and local agencies as well as individuals or organizations that were interested or affected by the BLM's decision on this project were invited to participate in the scoping process and, if eligible, could request or be requested by the BLM to participate as a cooperating agency.

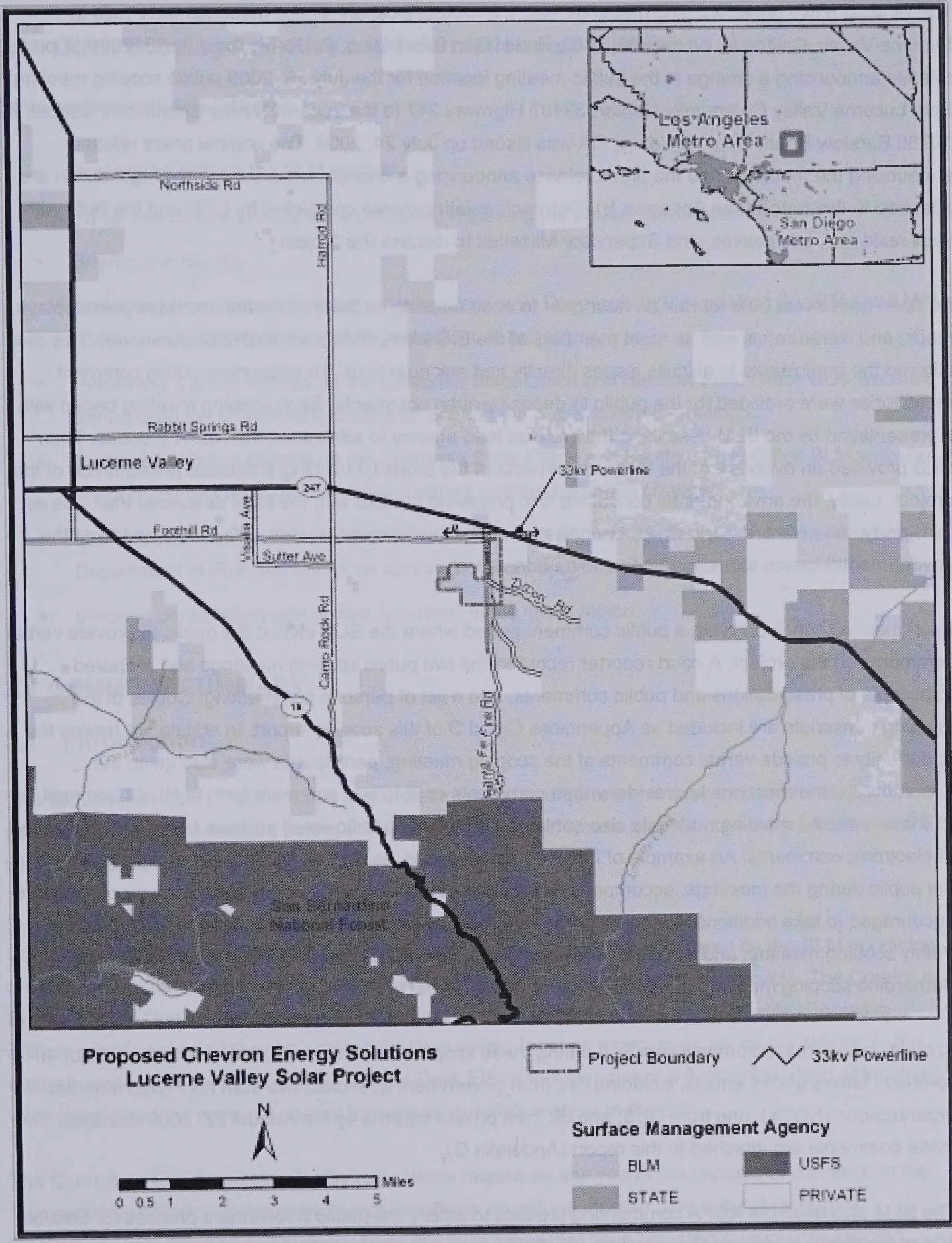


Figure 1 Project Overview

The BLM held two public scoping meetings near the project location. These meetings were held in Lucerne Valley, California, on July 29, 2009, and in San Bernardino, California, on July 30, 2009. A press release announcing a change in the public meeting location for the July 29, 2009 public scoping meeting from Lucerne Valley Community Center, 33187 Highway 247 to the Lucerne Valley Elementary School, 10788 Barstow Road, Lucerne Valley, CA was issued on July 24, 2009. The original press release announcing the meetings and the press release announcing a change in the public meeting location are attached to this report (see Appendix B). Outreach meetings were conducted by CES and the BLM with local residents, businesses, and Supervisor Mitzelfelt to discuss the project.

An open house was held for half an hour prior to each meeting so that participants could review displays, maps, and literature, as well as meet members of the EIS team, BLM staff, and CES personnel. This also allowed the participants to discuss issues directly and ask questions. To encourage public comment, repositories were provided for the public to deposit written comments. Each scoping meeting began with a presentation by the BLM describing their role as lead agency to administer the NEPA process. Then CES provided an overview of the technical aspects of the project, including a detailed presentation of the project. Lastly, the environmental consulting firm preparing the EIS with the BLM described their role as third-party consultant, described opportunities for public involvement, and provided an overview of the environmental issues already identified to be addressed.

Each meeting concluded with a public comment period where the BLM invited the public to provide verbal comments on the project. A court reporter recorded the two public scoping meetings and prepared transcripts of presentations and public comments, and a list of persons commenting. Copies of the meeting transcripts are included as Appendices C and D of this scoping report. In addition to having the opportunity to provide verbal comments at the scoping meeting, participants were also given the opportunity at the meetings to provide written comments or to take a comment form to fill out and mail in at a later date. All meeting materials also contained a project-specific email address to facilitate collection of electronic comments. An example of these comment forms, as well as all other materials available to the public during the meetings, accompany this report (see Appendix E). Attendees of the meetings were encouraged to take additional comment forms with them. Seventy eight people attended the Lucerne Valley scoping meeting, and 13 people provided verbal comments. Seven people attended the San Bernardino scoping meeting, and two people provided verbal comments.

In addition to verbal comments received during these scoping meetings, the BLM received a total of 40 comment letters and/or emails, including five from government agencies, two from non-governmental organizations (NGOs), one from CES, and 32 from private citizens by the August 22, 2009 deadline; these comments are attached to this report (Appendix G).

The BLM also used the NEPA commenting process to satisfy the public involvement process for Section 106 of the National Historic Preservation Act (NHPA) (16 U.S. Code 470f) as provided for in 36 CFR 800.2(d)(3).

2.1 Other Scoping Activities and Information Repositories

Other scoping activities included:

- Posting the NOI on the BLM website.
- Three newspaper articles were published regarding the project (see Appendix I)
- Briefing the county
- Calling representatives of Lucerne Valley Economic Development Association (LVEDA) and MAG (full name of organization not known) to discuss project
- Publishing a press release on the California State Office and Barstow Field Office BLM websites announcing the times and locations for each of the public scoping meetings.
- Publishing a press release on the California State Office and Barstow Field Office BLM websites announcing that the Lucerne Valley meeting location had been changed.
- CES initiated discussions with the United States Fish and Wildlife Service and the California Department of Fish and Game on survey protocols and data collection requirements.
- Initiating consultation with Native American tribes in the region.

3.0 COMMENT SUMMARY

3.1 Introduction

This section provides: (1) summaries of the method used to organize and analyze comments; (2) summaries of issues identified during scoping; and (3) a list of issues that will not be identified in the EIS with justification as to why they will not be addressed.

Comments regarding the project and alternatives to the project will be considered by the BLM in refining the project description and alternatives that will serve as the basis for assessing impacts. The Council on Environmental Quality regulations implementing NEPA requires an analysis of available alternative actions prior to selecting the preferred alternative action. Input on alternatives will be considered in the analysis and text of the EIS. Chapter 2 of the Draft EIS/Plan Amendment will describe which alternatives were considered but were not carried forward for detailed analysis in the EIS.

The Council on Environmental Quality regulations require an analysis of the impacts of a project on the "human environment." These impacts include effects on natural, human, and cultural resources. Discussions with affected public or agencies, such as those that have occurred through this scoping effort, help to define and evaluate effects of the different alternatives on the human environment.

Comments relating to environmental impacts will be considered by BLM in developing the scope of EIS technical studies. Chapter 3, Affected Environment, and Chapter 4, Environmental Consequences, of the EIS will address the issues incorporated into the study. Concerns about the EIS studies and decision-making processes will be considered in refining and modifying the EIS process throughout the remainder of the EIS preparation.

Some comments may be considered outside the scope of this EIS if: (1) the issue relates to facilities not included in this project; (2) the issue is not within the jurisdiction of BLM to resolve; or (3) the issue cannot be reasonably addressed within the scope of this process or is being addressed through a separate NEPA process. In addition, personal opinions of individuals or special interest groups about the project, wind power, the BLM, and other topics are also considered outside the scope of the EIS and will not be addressed.

3.2 Organization of Comments

Oral comments from the scoping meetings, comment forms, e-mails and letters received through August 22, 2009 were reviewed, documented, and entered into a database to facilitate organization, sorting, and analytical review. The database was structured to organize comments into separate issue categories and by type of comment (e.g., letter, e-mail, or oral comment from scoping meetings). Using the experience and professional judgment of the study team, the comments were organized according to 21 major issue categories as they relate to the EIS. The issue categories are as follows and described in detail in Section 3.4.

The Project and Alternatives: This category includes comments about various aspects and components of the project as well as suggestions for project alternatives that should be considered in the EIS. Comments also identified topics relative to the planning and EIS preparation process, including public review opportunities. Identified issue categories are:

1. NEPA Process (including EIS preparation and studies)
2. Project Alternatives
3. Project Description
4. Purpose and Need

Environmental Impacts: This category includes comments about the project's potential impacts on natural resources, human resources, and cultural resources as well as comments about social and economic concerns. The issue categories identified include the following:

1. Aesthetics/Visual Resources
2. Air Quality
3. Biological Resources
4. Climate Change

5. Cultural Resources
6. Cumulative Impacts
7. Environmental Justice
8. Geologic Resources
9. Growth Inducement
10. Hazardous Wastes
11. Hydrology, Water Quality and Water Resources
12. Land Use
13. Recreation
14. Social and Economic Considerations
15. Soils
16. Traffic and Transportation
17. Utilities

3.3 Summary of Comments

All comments received during the scoping period are presented in Table 1, located at the end of this chapter. It should be noted that comments presented in Table 1 have not been changed from their original format; therefore, the comments reflect the views of the commenters and may contain factual errors. Transcripts from each of the public scoping meetings (Appendices C and D), and written comments received during the public scoping period (Appendix G), are attached to this report.

The following governmental agencies provided comments:

- LVEDA
- Town of Apple Valley
- U.S. Environmental Protection Agency (EPA)

The following NGOs provided comments:

- California Desert Coalition
- California Wilderness Coalition
- Defenders of Wildlife
- Desert Protective Council
- Mojave Desert Land Trust
- Natural Resources Defense Council
- Partnership for Johnson Valley
- Sierra Club
- Sierra Club Desert Committee Energy Committee

- The Audubon Society
- The Nature Conservancy
- The Wilderness Society
- The Wildlands Conservancy

Members affiliated with the following organizations/groups submitted comments (in some cases, full names of some organizations were not provided):

- California State Lands Commission
- Friends of Giant Rock
- Hemet Ranch
- Johnson Valley Improvement Association
- MAC
- MDAQMO
- myjeeprocks.com
- Off Road Business Association
- Society for Conservation of Bighorn Sheep
- U.S. Army
- U.S. Marine Corps
- Victor Valley College

The following companies submitted bids to provide services:

- Power Substations
- HelioPower
- FenceCorp

The following organizations/groups were present at the Lucerne Valley public scoping meeting but did not provide oral or written comments:

- AREP
- California Department of Fish and Game
- County of San Bernardino
- HVEC
- LVMAC
- Lucerne Valley Market and Hardware
- Mojave Environmental Education Consortium

The following organizations/groups were present at San Bernardino public scoping meeting but did not provide oral or written comments:

- Edison Intl
- CSUSB

In addition, 15 individuals provided comments during the two public scoping meetings, and 28 individuals submitted a total of 32 written comments. Of the 32 written comments, 11 were requests for information (such as a request for a map or a request to be added to the mailing list), three were bids to provide services (see above), and two were scams.

3.4 Issues Identified During Scoping

This section provides a summary of issues identified during scoping organized by issue category. Some statements summarize multiple comments while others present only one comment. The method used to identify and categorize issues is discussed in Sections 3.2 and 3.3.

NEPA Process

Concern was expressed about the BLM's role in renewable energy project development and their role in expediting the projects under federal mandates. For example, concern was raised about whether the BLM would be contradicting its mission statement to preserve and protect public lands. Some commenter's also suggested that this project should be addressed as part of the Solar Energy Development Programmatic EIS being prepared by the Department of Energy and the BLM.

Project Alternatives

Primary concerns involved the use of lands described as "undisturbed or pristine" versus sites in previously disturbed areas. Commenters generally expressed support of projects being sited on land that has been previously graded or altered from other forms of project activity, and suggested moving the project to other areas owned by the BLM that are already impacted by other renewable energy projects, such as land near Highway 58 and 395, BLM lands east of Yucca Valley, or land managed by Edwards Air Force Base.

Some commenters also suggested the project should be considered in less populated areas to avoid the cumulative effects including impacts on wildlife, visual, and stress on natural resources such as water.

Some commenters suggested that the project should consider placing solar panels on rooftops, closer to the load source. Another commenter suggested the site be developed using windmills.

Project Description

Several commenters expressed concern about how the project would tie in to transmission lines and the cumulative need for additional transmission from the other renewable energy projects in the area. A commenter requested clarification regarding the use of Foothill Road transmission lines by the project and whether additional transmission poles would be added during the first or subsequent phases of the project. Concerns were raised about whether the project would plan to tie in to the proposed Los Angeles Department of Water and Power (LADWP) transmission line that some commenters stated is generally opposed by CDCA supporters and NGOs.

Commenters requested clarification of road plans; whether access roads would be paved; and, if any roads would be closed to the public, such as the Santa Fe Fire Trail. Concerns regarding dust mitigation methods were reiterated. Commenters expressed concern about water, specifically the source and the amount projected for construction and operation.

It was suggested that the project site be used for multiple purposes, such as constructing underground facilities to maximize the benefit if the land were going to be disturbed; for example, commenters expressed support for Chevron's rooftop design elements. It was also requested that the proposed CDCA Amendment be explained and clarified.

Purpose and Need

Commenters expressed concern over the purpose and need for the project to be on constructed on land described as undisturbed, instead of land that has been previously disturbed and graded with access to transmission. Other commenters expressed concern over impacts related to the project occurring near populated areas, and about cumulative impacts on the quality of life; commenters suggested moving the project to BLM lands in a more remote area. It was suggested the project consider using the land for multiple purposes (in addition to solar) to better justify disturbing desert lands described as pristine.

Commenters expressed concern over the proposed CDCA Plan Amendment and requested clarification on what it entails. It was suggested that BLM consider future reuse of the project to determine if the benefits of the project outweigh any long-term environmental impacts.

Aesthetics/Visual Resources

Commenters' concerns regarding visual resources focused on impacts to views and an overall concern that the cumulative impact from renewable energy projects proposed for the Mojave Desert, including wind and other solar projects. Additionally, some commenters were concerned that the project would be an "eye sore."

To avoid impacts to the visual quality of the project area some commenters suggested the project be moved to other BLM or privately-owned land that is already disturbed.

Air Quality

Concerns regarding air quality were focused primarily on dust resulting from the construction and operation of the project. Commenters expressed concern over dust mitigation and how the project would reduce impacts to air quality.

General concern was expressed about site clearing/grading methods to be used and the amount of dust that would be created. Another general concern involved the methods and materials that would be used to restore the site after construction and whether the project would take into account replacing the surface with native vegetation.

Biological Resources

Several comments were in regards to impacts the project would have on biological resources, primarily wildlife species. Cumulative impacts to wildlife habitat and migration patterns were a recurring concern among commenters. It was suggested that a great deal of projects planned along the 247 corridor could limit or completely cut off a migration route for some species. Concern was also expressed specifically in regards to impacts from the project on bighorn sheep habitat and migration.

It was suggested that the BLM conduct a study of the entire Mojave Desert, rather than program or project-specific studies, to determine cumulative impacts on wildlife species. It was also suggested that the BLM conduct wildlife connectivity studies of the entire Mojave Desert.

General concern was expressed regarding the sensitivity of the project area for desert tortoise. A concern about the creosote plant was raised and that a small reserve may be located in the project site. Commenters recommended the BLM ensure all biological resources surveys are conducted and mitigation is provided. Some commenters also recommended maximizing the use of the project and not disturbing more pristine habitat. Concern was raised over the radius for studies of cumulative impacts on bio resources.

Climate Change

Three comments were received pertaining to Climate Change. One comment requested that the DEIS should consider how climate change could potentially influence the proposed project, specifically within sensitive areas, and assess how the projected impacts could be exacerbated by climate change. One comment requested that the DEIS disclose the anticipated climate change benefits of solar energy and suggested quantifying greenhouse gas emissions from different types of generating facilities including solar, geothermal, natural gas, coal-burning, and nuclear and compiling and comparing these values. One comment requested that the DEIS discuss whether any trenching, grading, and filling associated with the construction of these projects and the installation of the solar arrays, will affect the deserts ability to store carbon, and to what degree this may occur.

Cultural Resources and Tribal Consultations

Four comments pertaining to cultural resources were received during the scoping meetings. The comments expressed concerns of the effect of the project on a possible future designation for Hwy 247 (Old Woman Springs Road) as a historic or scenic highway and that protection of cultural resources be the priority of the study with clear strategies outlined to minimize and mitigate impacts.

Native American concerns were also brought up in the scoping comments. One comment requested that the results of tribal government consultation be detailed in the DEIS along with how any issues that were raised were addressed in the selection of the proposed alternative. The other comment expressed that the DEIS should identify the existence of Native American sacred sites in the project areas, and that Executive Order 13007 be addressed and distinguished from Section 106 of the National Historic Preservation Act. Discussions should include how negative effects to sacred sites will be prevented, should sacred sites be found to exist within the project site. Summaries of all tribal, State Historic Preservation Officer, and Tribal Historic Preservation Officer coordination should be provided, as should the development of a Cultural Resource Management Plan.

In accordance with 40 CFR 1501.7, which requires that scoping must be conducted both internally with appropriate BLM staff and include tribes, the following tribes were given notice of the project as the first step in the consultation process:

- Fort Mohave Indian Reservation
- Colorado River Indian Tribes

Cumulative Impacts

A number of commenters were concerned about cumulative impacts on desert resources. Concerns about the cumulative impacts from alternative energy projects on quality of life in the desert was a repeated comment, specifically in regards to visual impacts and impacts to recreation. A summary of comments involving cumulative impacts is included in the summary for resources.

Environmental Justice

A commenter requested that the EIS identify environmental justice populations in the project area.

Geologic Resources

Concern was expressed about the area's concentrated geologic fault zones, whether the project's land would be stable, and whether the BLM would require a geological study. It was suggested the project prepare a water diversion mitigation plan to respond to the potential for flash flooding and to address erosion and other damage that could result.

Commenters expressed concern in regards water sources and whether the project would use water from local water systems or drill wells. In addition, a concern was raised over the accuracy of the project's projected water needs.

Growth Inducement

One commenter expressed concern that Draft Environmental Impact Statement (DEIS) should describe the reasonably foreseeable future land use and associated impacts that will result from the additional power supply. The document should also address the amount of growth, its likely location, and the biological and environmental resources at risk.

Hazardous Materials/Waste

One commenter stated that the Draft Environmental Impact Statement (DEIS) should address potential direct, indirect and cumulative impacts of hazardous waste from construction and operation. The commenter also stated that the DEIS should identify projected hazardous waste types and volumes, and expected storage, disposal, and management plan. There was also a comment that the proponent strive to address the full product life cycle, including PV panel manufacturing.

Hydrology, Water Quality and Water Resources

Commenters expressed concern about water and whether the project would use water from local water systems or drill wells; in addition, a concern was raised over the accuracy of the project's anticipated water needs.

Land Use

Commenters expressed concern about the use of land they described as undisturbed, instead of developing the project on previously disturbed land no longer considered "pristine." Concern was raised that SCE is taking advantage of transmission tie-in options. Concern was expressed that the Lucerne Valley is experiencing an influx of renewable energy projects that would cumulatively affect the quality of life, and the character and scenic quality of the desert.

It was suggested that BLM consider future reuse of the project to determine if the benefits of the project outweigh any long-term environmental impacts.

Additionally, a letter was jointly submitted by the Audubon Society (California), the California Wilderness Coalition, Defenders of Wildlife, the Desert Protective Council, the Mojave Desert Land Trust, the Natural Resources Defense Council, the Sierra Club, The Nature Conservancy, The Wilderness Society, and The Wildlands Conservancy that suggested renewable energy siting criteria for the California Desert Conservation Area. The letter detailed areas that should be prioritized for siting and high conflict areas that should be avoided when siting renewable energy projects.

Recreation

Several commenters expressed concern about how the project and cumulative projects would affect desert recreation.

Social and Economic Considerations

Commenters expressed concern that the project is being developed in an area that is not doing well economically. Though the project is supposed to generate money, the trade-off is the potential loss of pristine land and animal habitat for a questionable source of energy. Commenters were concerned whether there would be any economic benefits for Lucerne Valley in terms of tax revenue or donations from Chevron. It was suggested the BLM require a payment bond from the project to account for future restoration costs at and after decommissioning.

Concerns were raised in regards to the number of temporary and permanent workers that would be hired from Lucerne Valley and whether these workers would be hired locally.

Commenters inquired how much tax revenue the project, upon completion, would bring to Lucerne Valley and whether Chevron would provide monetary donations to Lucerne Valley. It was suggested that the BLM project the cost of restoring the land upon project decommissioning and incorporate that cost into the project. Additionally, commenters raised concerns about how the project will affect property values.

Soils

One commenter requested that soil resource issues be addressed early in the process through preparation of detailed drainage, erosion, sediment control plans in order to identify potential impacts and develop mitigation measures that would reduce impacts to a level of less than significant.

Transportation and Traffic

Commenters expressed concern about how the project will affect access to existing roads, specifically the Santa Fe Fire Trail. Concern was also raised about impacts that dust resulting from the project would affect travel on roads, and the actions the project would take to reduce dust, such as hardening the roads. Improvements to SH 247 were recommended.

Utilities

One commenter expressed concern about the source of water, the quantity of water and the potential impacts to the community water system. One commenter expressed concerns about the capacity of the existing transmission line, the proposed upgrades and net transmission loss.

One commenter requested information about the present load of the 33-Kv line, the plan to address transmission upgrades and whether or not these upgrades are included in the ROW application.

3.5 Issues Outside the Scope of the EIS

Some comments were received requesting addition to BLM project mailing lists or requesting copies of the project site map. Some commenters also requested that the BLM add them to the mailing list. One commenter recommended an environmental consulting firm for the BLM to consider hiring. Each of these requests have been satisfied and will not be addressed in the Draft EIS.

A comment was also received requesting that this project be evaluated as part of the Programmatic EIS being prepared by BLM and the U.S. Department of Energy, Energy Efficiency and Renewable Energy Program the Solar Energy Development Program for utility-scale solar energy development in six western states (Arizona, California, Colorado, New Mexico, Nevada, and Utah). In response to public interest in solar energy development, the BLM announced in July 2008 that it planned to continue accepting applications for future potential solar development on the public lands, while the programmatic Environmental Impact Statement (PEIS) is being prepared.

Additionally, two comments were received that appeared to be scams. These comments were irrelevant and will not be addressed in the Draft EIS.

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
AESTHETICS/VISUAL RESOURCES		
Visual Resources	AE1: I'm a hunter/conservationist and I've been on top of all these mountains and I enjoy the view and don't know that it's going to be the same with windmills on the ridges and mirrors reflecting skyward.	Gary Hatfield, member of the Society for Conservation of Bighorn Sheep, Lucerne Valley, 7/29/09
	AE2: I am pleased that they're low profile. Another proposal north of town here was 300 foot tall solar panels on thousands of acres which would look like the New York skyline. So I'm happy about that.	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
	AE3: And this place is going to be disgusting if it looks like Tehachapi or Desert Hot Center, Desert Hot Springs. That's what it's going to look like if the federal government allows all these projects that are proposed to come in.	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
	AE4: I'm just thinking that you guys ought to look at other areas and less populated areas and if, you know, you want to live in Tehachapi with the wind mills or over in Desert Hot Springs with the wind mills over there and look out your window and just see whoosh, whoosh. Well I don't want to see it.	Jim Meshard, Lucerne Valley, 7/29/09
	AE5: The Draft EIS should consider impacts to wildlife, including the desert tortoise, along with the impacts to the scenic visual landscape between Lucerne Valley and Yucca Valley, including the Johnson Valley OHV [Off-Highway Vehicle] area.	Brendan Hughes, Joshua Tree, 7/25/09
	AE6: Visual impact counts! The rural communities and the open spaces surrounding them are the goal of many who leave the urban sprawl behind for recreation in the desert. The rural communities depend in large measure on the tourist dollar, as does the county, as does the state.	Betty Munson, Johnson Valley, 8/22/09
Visual Analysis	AE7: The BLM and Chevron Energy Solutions should continue to collaborate on a visual analysis conforming to BLM regulations to address concerns identified in during the scoping period.	The Wilderness Society, 8/21/09
Scenic Roads	AE8: OLD WOMAN SPRINGS RD. (SR 247) is a County Scenic Route…The process is under way to have SR247, from Yucca Valley through Lucerne Valley and up to Barstow, designated as a California Scenic Highway… The fact that this proposed solar project may not be visible in its entirety from Old Woman Spring Rd. (SR247) does not negate the fact that it is just the first solar proposal to get to the Public Scoping stage.	Betty Munson, Johnson Valley, 8/22/09
General – Visual Resources	AE9: [The following is a response to the question on the comment form, “What issues should be addressed in this environmental document?”] The… visual impact…	Charlene Claybaugh, affiliated with the Johnson Valley Improvement Association, Lucerne Valley, 7/29/09
	AE10:: [The following is a response to the question on the comment form, “What issues should be addressed in this environmental document?”] eye sore	M Diane Hunnicult, Lucerne Valley, 7/29/09
	AE11: [The following is a response to the question on the comment form, “What issues should be addressed in this environmental document?”] Eye sore	Juanita Crouse, Lucerne Valley, 7/29/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
AIR QUALITY		
Dust Generation/ Dust Control	AQ1: One big concern, okay, you guys get this thing put in, get it up and operating, what about the dust? You guys are going to be opening up over 500 acres. How much of that is going to be re-covered and resealed with the fungus that naturally grows out here under the topsoil or just under the top layer. I'd like to know how you guys would be dealing with that because we get some hellacious easterly prevailing winds in here and you look at, you look north of town you can just see the dust clouds go across the desert.	Jeff Arnold, Lucerne Valley, 7/29/09
Dust Generation/ Dust Control	AQ2: My question is, have you guys even studied how many tons of dust or dirt will be blowing after you guys get this completed?	Jeff Arnold, Lucerne Valley, 7/29/09
	AQ3: I share the concern of the gentleman before me about the dust (see AQ1 and AQ2). And I'm also concerned about the dust on the road. For example, on Santa Fe Trail Road. Is that going to be hardened so that there will be no dust provided there so that you'll still have access or will some of the access be curtailed because of dust?	Harry Baker, representing the Partnership of Johnson Valley and affiliated with CA4WDC, Lucerne Valley, 7/29/09
	AQ4: And also, further on down the line that the dust that is generated by the cement plants and that, will that have an impact on the solar plants?	Harry Baker, representing the Partnership of Johnson Valley and affiliated with CA4WDC, Lucerne Valley, 7/29/09
	AQ5: Now are you going to have paved roadways for access between there or are you going to leave it dirt? That would be something that I think the BLM needs to look at very closely for air quality.	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
	AQ6: Of course, quality, the air quality is the big concern. We have lots of land, little water and probably promise of a lot less with climate change coming in. So air quality and dust mitigation are always a big concern on these.	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 7/29/09
	AQ7: De-brushing/grading will create a long-term dust source, adversely affecting the facility and down-wind receptors. Minimal grading, vegetation mowing, and placement of decomposed granite or small gravel will help to stabilize the site and reduce weed infestations—as well as enhance native re-vegetation if and when facilities are removed.	Chuck Bell, representing the Lucerne Valley Economic Development Association (LVEDA), Lucerne Valley, 8/03/09
	AQ8: Also have some concerns and questions about the, if you're going to be blading the land or if it's going to be mowed, what the water usage will be and dust mitigation issues.	April Sall, representing the Wildlands Conservancy and the California Desert Coalition, Lucerne Valley, 7/29/09
	AQ9: Santa Fe Fire Rd. should be paved or at least graveled—benefits local residents and eliminates a dust source.	Chuck Bell, representing LVEDA, Lucerne Valley, 8/03/09
	AQ10: What will be done to mitigate the effects of blowing dust and sand when the project site has been disturbed?	Dennis Pond, Lucerne Valley, 08/03/09
	AQ11: I'm concerned about the dust on the road. For example, on Santa Fe Trail Road. Is that going to be hardened so that there will be no dust provided there so that you'll still have access or will some of the access be curtailed because of dust?	Harry Baker, representing the Partnership of Johnson Valley and affiliated with CA4WDC, Lucerne Valley, 7/29/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
AIR QUALITY (Continued)		
Dust Generation/ Dust Control	AQ12: Fugitive Dust Control Plan—The Draft EIS (DEIS) should identify the need for Fugitive Dust Control Plan. We recommend that it include these general recommendations: ▪ Stabilize open storage piles and by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions. ▪ Install wind fencing and phase grading operations where appropriate and operate water trucks for stabilization of surfaces under windy conditions; and ▪ When hauling material and operation non-earthmoving equipment, prevent spillage and limit speeds to 15 mph. Limit speed of earth-moving equipment to 10 mph.	Environmental Protection Agency (EPA), 08/04/09
Greenhouse Gas	AQ13: The greenhouse gases produced by building a solar project at a remote site, as opposed to rooftop solar or closer to population centers, should be considered in the analysis of the project.	Brendan Hughes, Joshua Tree, 7/25/09
	AQ14: The BLM should comprehensively analyze the Lucerne Valley Solar Project's net reductions to GhG emissions, including GhG emissions during manufacture, construction, operation, decommissioning, and reclamation of the project site. The analysis should consider both the potential for the project to reduce GhG emissions as well as potential for the project to increase GhG emissions, for example, by disturbing undisturbed land currently useful for carbon sequestration. The results of this analysis should then be compared to the same type of analysis for fossil-fuel based energy production, including combined-cycle natural gas fired and coal fired power plants.	The Wilderness Society, 8/21/09
General Air Quality	AQ15: Of course, quality, the air quality is the big concern.	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 7/29/09
	AQ16: The DEIS should provide a detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards (NAAQS), criteria pollutant nonattainment areas, and potential air quality impacts of the proposed projects (including cumulative and indirect impacts). Such an evaluation is necessary to assure compliance with State and Federal air quality regulations, and to disclose the potential impacts from temporary or cumulative degradation of air quality.	EPA, 08/04/09
	AQ17: The DEIS should describe and estimate air emissions from potential construction and maintenance activities, as well as proposed mitigation measures to minimize those emissions.	EPA, 08/04/09
	AQ18: Existing Conditions – The DEIS should provide a detailed discussion of ambient air conditions, NAAQS, and criteria pollutant nonattainment areas in all areas considered for solar development.	EPA, 08/04/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
AIR QUALITY (Continued)		
General Air Quality	AQ19: Quantify Emissions – The DEIS should estimate emissions of criteria pollutants from the proposed projects and discuss the timeframe for release of these emissions over the lifespan of the projects. The DEIS should describe and estimate emissions from potential construction activities, as well as proposed mitigation measures to minimize these emissions.	EPA, 08/04/09
	AQ20: Specify Emission Sources – The DEIS should specify the mission sources by pollutant from mobile sources, stationary sources, and ground disturbance. This source specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention.	EPA, 08/04/09
	AQ21: Equipment Emission Mitigation Plan (EEMP) – The DEIS should identify the need for an EEMP. An EEMP will identify actions to reduce diesel particulate, carbon monoxide, hydrocarbons, and NOx associated with construction activities. We recommend that the EEMP require that all construction-related engines: ▪ Are tuned to the engine manufacturer's specification in accordance with an appropriate time frame; ▪ Do not idle for more than five minutes (unless, in the case of certain drilling engines, it is necessary for the operating scope); ▪ Are not tampered within order to increase engine horsepower; ▪ Include particulate traps, oxidation catalysts and other suitable control devices on all construction equipment used at the project sites; ▪ Use diesel fuel have a sulfur content of 15 parts per million or less, or other suitable alternative diesel fuel, unless such fuel cannot be reasonably procured in the market area; and ▪ Include control devices to reduce air emissions. The determination of which equipment is suitable for control devices should be made by an independent Licensed Mechanical Engineer. Equipment suitable for control devices may include drilling equipment, generators, compressors, graders, bulldozers, and dump trucks.	EPA, 08/04/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
BIOLOGICAL RESOURCES		
Impacts on Vegetation	BIO1: And although the gentleman said it was brown out there one of the oldest living plants, the Creosote plant lives out here. It has a small reserve and it's covered in this, where this project is being sited.	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 7/29/09
Impacts on Wildlife	BIO2: Disturbance of desert vegetation to construct project could affect animals.	Dan Musetti, affiliated with Hemet Ranch, San Bernardino, 7/30/09
	BIO3: [Bighorn] Sheep may need to migrate from one range to another. If you fill up the BLM land with industrial complexes then it's going to be more difficult to do.	Gary Hatfield, member of the Society for Conservation of Bighorn Sheep, Lucerne Valley, 7/29/09
	BIO4: And over in that area [proposed project site]. I ride my motorcycle and stuff over there and things and I've seen Kangaroo Rats over there. I've seen tortoises over there. I've seen other animals that, you know, I've seen the goats and the bobcats come down. What is this going to do to them?	Jim Meshard, Lucerne Valley, 7/29/09
	BIO5: The BLM has not done any wildlife connectivity studies. They're being left to private non-profits to do. So we really don't know what the movement is that's going to be interrupted by this first solar project. And looking at your solar programmatic you're planning a lot more along this 247 corridor. And so basically you may be cutting off a whole corridor there and not even knowing until after the facts.	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 7/29/09
	BIO6: The BLM should prioritize protection of species in the project proposal area by further analyzing potential impacts and developing Best Management Practices and steps to minimize and mitigate any unavoidable impacts.	The Wilderness Society, 8/21/09
	BIO7: You should find out about wildlife use of that area and consider how valuable that land might be in the future.	Gary Hatfield, member of the Society for Conservation of Bighorn Sheep, Lucerne Valley, 7/29/09
	BIO8: Those of us who have built on private property have had to consider wildlife habitat in our construction. What will be done to protect the desert tortoise, big horn sheep, cougars, desert fox and coyotes? Because the project site is BLM land, and the federal government has a vested interest in its construction, will these concerns be considered, or swept under some rug?	Dennis Pond, Lucerne Valley, 08/03/09
	BIO9: We are gathering information to fight this plan and one of our questions is regarding the round tail squirrel is on the endangered species list.	Ramona Doles, representing the Homeowners of Newberry Springs, 8/1/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
BIOLOGICAL RESOURCES (Continued)		
Impacts on Wildlife- Desert Tortoise	BIO10: First thing is, what is the category now for Desert Tortoise in this area? Is it density category 3, 4, category 1?	Alan Manee, San Bernardino, 7/30/09
	BIO11: Is there any occurrence or findings of [Desert Tortoise] burrows on the side at all?	Alan Manee, San Bernardino, 7/30/09
	BIO12: What is the category for this property in terms of the occurrence of Desert Tortoise?	Alan Manee, San Bernardino, 7/30/09
	BIO13: The Draft EIS should consider impacts to wildlife, including the desert tortoise.	Brendan Hughes, Joshua Tree, 7/25/09
Mitigation	BIO14: Make sure that any of the biological resources surveys and any mitigation would be handled.	D'Anne Albers, representing Defenders of Wildlife and the Sierra Club Desert Committee Energy Committee, Lucerne Valley, 7/29/09
Habitat impacts and mitigation	BIO15: The DEIS should identify all petitioned and listed threatened and endangered species and critical habitat that might occur within the project area. The document should identify and quantify which species or critical habitat might be directly, indirectly, or cumulatively affected by each alternative and mitigate impacts to these species. Emphasis should be placed on the protection and recovery of species due to their status or potential status under the Endangered Species Act. We recommend that the BLM Consult with the U.S. Fish and Wildlife Service and prepare a Biological Opinion under Section 7 of the ESA if there are threatened or endangered species present. The DEIS should provide a recent status update of this report if this action has been or will be undertaken. Analysis of impacts and mitigation on covered species should include: ▪ Baseline conditions of habitats and populations of the covered species; ▪ A clear description of how avoidance, mitigation, and conservation measures will protect and encourage recovery of covered species and their habitats in project area; ▪ Monitoring, reporting and adaptive management efforts to ensure species and habitat conservation effectiveness.	EPA, 08/04/09
	BIO16: The DEIS should indicate what measures will be taken to protect important wildlife habitat areas from potential adverse effects of proposed covered activities.	EPA, 08/04/09
Habitat impacts and mitigation	BIO17: The proposed solar project at Lucerne Valley should be denied permits, etc. and not allowed to be built and regulated against because of the excessive amount of damage that would be caused by all the activity and destruction of habitat in this region. The fragility of this desert region is extremely hard to ever repair if at all and fragmenting it is really destructive.	Kim Bauer, Unknown, 08/17/09
Increased shading impacts	BIO18: The DEIS should discuss the impacts associated with an increase of shade in the desert environment on vegetation and/or species.	EPA, 08/04/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
BIOLOGICAL RESOURCES (Continued)		
Project Fencing	BIO19: The DEIS should discuss the impacts associated with constructing fences around the project site(s), and consider whether there are options that could facilitate better protection of covered species.	EPA, 08/04/09
Invasive plants	BIO20: The DEIS should include an invasive plant management plan to monitor and control noxious weeds.	EPA, 08/04/09
Mitigation	BIO21: Right now you're just ballpark estimate would be there'd be minor mitigation for the removal of those [Desert Tortoise] species and maybe any plant species that you've located. So you're not anticipating a great deal of mitigation on this property at this point.	Alan Manee, San Bernardino, 7/30/09
CLIMATE CHANGE		
Climate Change Impacts	CC1: The DEIS should consider how climate change could potentially influence the proposed project, specifically within sensitive areas, and assess how the projected impacts could be exacerbated by climate change.	EPA, 08/04/09
Climate Change Benefits	CC2: The DEIS should quantify and disclose the anticipated climate change benefits of solar energy. We suggest quantifying greenhouse gas emissions from different types of generating facilities including solar, geothermal, natural gas, coal-burning, and nuclear and compiling and comparing these values.	EPA, 08/04/09
Carbon Storage	CC3: The DEIS should discuss whether any trenching, grading, and filling associated with the construction of these projects and the installation of the solar arrays, will affect the deserts ability to store carbon, and to what degree this may occur.	EPA, 08/04/09
CULTURAL RESOURCES		
Historic/Scenic Designation of Hwy 247	CR1: Effect on a possible future "historic/scenic" designation for Hwy 247 (Old Woman Springs Rd.)	Chuck Bell representing LVEDA, Lucerne Valley, 08/03/09
Tribal Consultations/Coordination Potential Indian sacred sites in project areas	CR2: The DEIS should describe the process and outcome of government-to-government consultation between the BLM and each of the tribal governments within the project area, issues that were raised (if any), and how those issues were addressed in the selection of the proposed alternative.	EPA, 08/04/09
	CR3: The DEIS should address the existence of Indian sacred sites in the project areas. It should address Executive Order 13007, distinguish it from Section 106 of the NHPA, and discuss how the BLM will avoid adversely affecting the physical integrity of sacred sites, if they exist. The DEIS should provide a summary of all coordination with tribes and with the State Historic Preservation Officer/Tribal Historic Preservation Officer, including identification of National Register of Historic Places eligible sites, and development of a Cultural Resource Management Plan.	EPA, 08/04/09
Protection of Cultural Resources	CR4: BLM should prioritize protection of the area's cultural resources, including study of the area's resources, development of strategies to minimize and mitigate impacts, and ongoing engagement in consultation with local Native American tribes.	The Wilderness Society, 8/21/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
CUMULATIVE IMPACTS		
General	CI1: We are concerned about the cumulative impacts.	D'Anne Albers, representing Defenders of Wildlife and the Sierra Club Desert Committee Energy Committee, Lucerne Valley, 7/29/09
	CI2: I'm concerned about the cumulative effect. You know if this was a stand alone project I'd be all for it. You can't see it from until you're right on top of it on the highway, Santa Fe Fire Road is open to give us access into the land behind it but the problem is BLM is the cumulative effect of all these projects.	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
	CI3: We're all concerned about these cumulative effects that are on, keep speaking about.	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 7/29/09
	CI4: I think right now, and I've lost count, and I know BLM, like any other state or federal agency has regions and areas, I'm not sure where you go but this I think 36, if we take the deserts of Southern California, I think there's 36 active projects right now of similar or other type of facility, not necessarily all solar. And I'm just concerned how that plays out in the big picture.	Alan Manee, San Bernardino, 7/30/09
	C15: We have urged that you do a full cumulative study of the desert and not just the solar programmatic to include things like the Ivanpah Airport and some of the wind projects and some of the really developments that are happening in the California desert. And that hasn't been done. And so we're piece-mealing that. And we're very concerned about that.	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 7/29/09
	CI6: I don't think you can remove the cumulative effect of all of these proposals and this land rush and this race for renewable energy.	Gary Hatfield, member of the Society for Conservation of Bighorn Sheep, Lucerne Valley, 7/29/09
	CI7: Cumulative impacts (environmental, socio-economic, traffic, visual, etc.) from this and all other proposed projects proposed for the Lucerne Valley/Johnson Valley region – (i.e.: LADWP's GPN transmission line, Granite Mt. Wind, Fry Mt. Wind, Edison Solar, Cannon Solar, 29 Palms Marine Base expansion, etc.).	Chuck Bell, representing LVEDA, Lucerne Valley, 08/03/09
	CI8: Problems created by solar fields such as dust, wildlife impacts, and flooding stand to destroy the desert environment.	Cynthia Anderson, Yucca Valley, 8/8/09
	CI9: The DEIS should consider the cumulative impacts associated with multiple large-scale solar projects proposed in the desert southwest and the potential impacts on various resources including: water supply, endangered species, and habitat.	EPA, 08/04/09
	CI10: If even two of these proposed [renewable energy] projects start construction at the same time – related traffic through town will become a major impact that must be mitigated.	Chuck Bell, representing LVEDA, Lucerne Valley, 08/03/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
CUMULATIVE IMPACTS (Continued)		
General	CI11: The cumulative impacts analysis should provide the context for understanding the magnitude of the impacts of the alternatives by analyzing the impacts of other past, present, and reasonably foreseeable projects or actions and then considering those cumulative impacts in their entirety (CEQ's Forth Questions, #18). The DEIS should clearly identify the resources that may be cumulatively impacted, the time over which impacts are going to occur, and the geographic area that will be impacted by the proposed projects. The DEIS should focus on resources of concern- those resources that are "at risk" and/or are significantly impacted by the proposed projects, before mitigation. In the introduction to the Cumulative Impacts Section, identify which resources are analyzed, which ones are not, and why. For each resource analyzed, the DEIS should: ▪ The DEIS should identify the current condition of the resource as a measure of past impacts. For example, the percentage of species habitat lost to date. ▪ Identify the trend in the condition of the resource as a measure of present impacts. For example, the health of the resource is improving, declining, or in stasis. ▪ Identify all on-going, planned, and reasonably foreseeable projects in the study area that may contribute to cumulative impacts. ▪ Identify the future condition of the resource based on an analysis of impacts from reasonably foreseeable projects or actions added to existing conditions and current trends. ▪ Assess the cumulative impacts contribution of the proposed alternatives to the long-term health of the resource, and provide a specific measure for the projected impact from the proposed alternatives. ▪ Disclose the parties that would be responsible for avoiding, minimizing, and mitigating those adverse impacts. ▪ Identify opportunities to avoid and minimize impacts, including working with other entities.	EPA, 08/04/09
	CI12: I think we're [,]as many of the other people have said [,] we're unduly over-impacted by all of these so-called wonderful solar and other projects. They're talking about building like 100 foot tall solar mirrors out here just to a little north of here. And then they're thinking about putting windmills in another area. And now they're planning of putting this here.	Jim Meshard, Lucerne Valley, 7/29/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
CUMULATIVE IMPACTS (Continued)		
General	CI13: There's great concern over LADWP's proposed Green Path North Project. A 500 kV transmission line that is proposed along the contingent corridor and the California Desert Conservation Area that has many solar proposals and a few wind proposals along its alignment through the high desert here and from Morongo Valley, actually Desert Hot Springs, out to Hesperia. And so any projects that would possibly facilitate that transmission line are of great concern and of opposition to many of the groups here.	April Sall, representing the Wildlands Conservancy and the California Desert Coalition, Lucerne Valley, 7/29/09
	CI14: Impact on Mojave Water Agency's Morongo Pipeline.	Chuck Bell representing LVEDA, Lucerne Valley, 08/03/09
	CI115: There are rumors of multiple energy-producing projects in this area, sponsored and constructed by various private and government agencies. There doesn't seem to be a great deal of concern for the cumulative effects these projects are apt to have on the quality of life for residents living in Lucerne Valley now. Unsightly wind turbines on every ridge and transmission lines crisscrossing the valley at multiple angles are not aesthetic additions to the natural scenery.	Dennis Pond, Lucerne Valley, 08/03/09
	CI16: I don't think you can remove the cumulative effect of all of these proposals and this land rush and this race for renewable energy. And it kind of saddens me because this is so obviously facilitation of development, the pressure coming from, you know, our elected leaders and so forth at a time when much of the world has no desire to cut back on their CO2 emissions. They're developing their economy. And we're kind of standing alone in our economy isn't doing that well. And we're going to trade off, as the other gentleman says, this real treasure of the public land resource and animals that inhabit it for our future for a questionable source of energy.	Gary Hatfield, member of the Society for Conservation of Bighorn Sheep, Lucerne Valley, 7/29/09
	C117: The general discussion about cumulative impacts of these projects as you're well aware there is a land rush in the California Desert for over 1.7 million acres depending on which spreadsheets you're looking at for the BLM.	April Sall, representing the Wildlands Conservancy and the California Desert Coalition, Lucerne Valley, 7/29/09
Renewable Energy	CI18: I'm with the Partnership of Johnson Valley. We are concerned about the cumulative impact of all the different projects that are hitting the desert, the wind generating plants, the solar plants, all of them and the effect they will have on recreation and on the quality of life in the desert.	Harry Baker, representing the Partnership of Johnson Valley and affiliated with CA4WDC, Lucerne Valley, 7/29/09
Cumulative Analysis Study Area	CI19: In the implementation and process of carrying out the responsibilities of BLM do you -- are you required, I know you are generally under NEPA, but are you required to look how far out that cumulative impacts could occur from other types of facilities or other types of proposed development as it addresses this site? Are you required to go out a certain number of feet, miles, kilometers, whatever it is, to evaluate any other associated impacts?	Alan Manee, San Bernardino, 7/30/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
CUMULATIVE IMPACTS (Continued)		
Visual Resources	CI20: I've been on top of all these mountains and I enjoy the view and don't know that it's going to be the same with windmills on the ridges and mirrors reflecting skyward.	Gary Hatfield, member of the Society for Conservation of Bighorn Sheep, Lucerne Valley, 7/29/09
Groundwater Supply	CI21: DEIS should include a discussion of cumulative impacts to groundwater supply within the hydrographic basin, including impacts from other large-scale solar installations that have also been proposed.	EPA, 08/04/09
ENVIRONMENTAL JUSTICE		
Environmental Justice Populations	EJ1: The DEIS should include an evaluation of environmental justice populations within the geographic scope of the projects. If such populations exist, the DEIS should address the potential for disproportionate adverse impacts to minority and low-income populations, and the approaches used to foster public participation bye these populations. Assessment coordination with those affected populations.	EPA, 08/04/09
GEOLOGIC RESOURCES		
Seismic Activity	GEO1: Also the Mojave Desert is riddled with earthquake faults so I'm just curious, you know, if the BLM is going to require a geological study of the area to make sure that it's stable enough. We have a lot of unstable land out here.	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
Geologic Stability	GEO2: How big an issue is geologic stability? The epicenter for the Landers Earthquake is only about 30 miles east of the site.	Dennis Pond, Lucerne Valley, 08/03/09
GROWTH INDUCEMENT		
	GI1: The DEIS should describe the reasonably foreseeable future land use and associated impacts that will result from the additional power supply. The document should provide an estimate of the amount of growth, its likely location, and the biological and environmental resources at risk.	EPA, 08/04/09
HAZARDOUS WASTES		
Impacts of hazardous waste from construction/operation	HAZ1: The DEIS should address potential direct, indirect and cumulative impacts of hazardous waste from construction and operation. The document should identify projected hazardous waste types and volumes, and expected storage, disposal, and management plans. It should address the applicability of state and federal hazardous waste requirement. Appropriate mitigation should be evaluated, including measures to minimize the generation of hazardous waste (i.e., hazardous waste minimization). Alternate industrial processes using less toxic materials should be evaluated as mitigation. This potentially reduces the volume or toxicity of hazardous materials requiring management and disposal as hazardous waste.	EPA, 08/04/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
HAZARDOUS WASTES (Continued)		
Address full product life cycle of project	HAZ2: EPA recommends that the proponent strive to address the full product life cycle by sourcing PV components from a company that 1) minimizes environmental impacts during raw material extraction; 2) manufactures PV panels in a zero waste facility; and 3) provides future PV disassembly for material recovery for reuse and recycling.	EPA, 08/04/09
HYDROLOGY, WATER QUALITY AND WATER RESOURCES		
Flash Flood Potential	HWR1: What protections will be provided against flash-flooding? Thunderstorms are frequent enough in the mountains to the south as well as in the project area itself to assume this will be an issue during the life of the project.	Dennis Pond, Lucerne Valley, 08/03/09
	HWR2: The studies they should be looking at that area over there [proposed project site] is prone to flash flooding. I mean flash flooding enough to close the highway. And so now you're going to take 500 acres and try to divert the water around that. Your plans need to show how you're going to mitigate that, the potential for flash flood and erosion and damage that that will cause okay.	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
Water Resources/Water Sources/Water Quality	HWR3: The proposed project is anticipating use of 10,000 gallons of water annually. This doesn't seem realistic to local residents. Where will the water come from?	Dennis Pond, Lucerne Valley, 08/03/09
	HWR4: Fox News did an investigation into the cost of upkeep and maintenance of the Solar Collection Panels that are used to collected the Suns Solar Energy. In their report they stated that these Panels need to be cleaned on a regular basis in order to operate effectively and that cleaning them Requires a Large Amounts of Water! The High Desert is in a very bad drought. We can't afford to use our scarce water to clean Your Solar Panels.	Steven Beavers, Barstow, 7/17/09
	HWR5: How is the water being provided? Does the ROW include well-drilling? If so, will these wells be metered?	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 8/3/09
	HWR6: The Town of Apple Valley requests that BLM identify within the EIS any impacts related to water resources and water quality.	Carol Miller, Town of Apple Valley, 8/11/09
	HWR7: DEIS should include a discussion of the amount of water needed for the proposed solar PV generation facility and where this water will be obtained.	EPA, 08/04/09
	HWR8: DEIS should include a discussion of availability of groundwater within the basin and annual recharge rates.	EPA, 08/04/09
	HWR9: DEIS should include an analysis of different types of technology that can be used to minimize or recycle water.	EPA, 08/04/09
	HWR11: [We are] also [concerned about] water use.	D'Anne Albers, representing Defenders of Wildlife and the Sierra Club Desert Committee Energy Committee, Lucerne Valley, 7/29/09
	HWR12: BLM should gather additional information to confirm that the water needed for the Lucerne Valley Solar Project will be available as well as that the source of the needed water will conform to all laws, ordinances, regulations and standards (LORS).	The Wilderness Society, 8/21/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
HYDROLOGY, WATER QUALITY AND WATER RESOURCES (Continued)		
Water Rights	HWR13: DEIS should include a description of the water right permitting process and the status of water rights within that basin, including an analysis of whether water rights have been over-allocated.	EPA, 08/04/09
Feasibility of using alternative water sources	HWR14: DEIS should include a discussion of whether it would be feasible to use other sources of water, including potable water, wastewater or deep-aquifer water.	EPA, 08/04/09
Project Discharges	HWR15: The DEIS should address the potential effects of project discharges, if any, on surface water quality. Specific discharges should be identified and potential effects of discharges on designated beneficial uses of affected waters should be analyzed. If the facility is a zero discharge facility, the DEIS should disclose the amount of process water that would be disposed of onsite and explain methods of onsite containment.	EPA, 08/04/09
Potential need for CWA 404 Permit	HWR16: The project applicant should coordinate with the U.S. Army Corps of Engineers (Corps) to determine if the proposed project requires a Section 404 permit under the Clean Water Act. Section 404 regulates the discharge of dredged or fill material into waters of the United States (WOUS), including wetlands and other special aquatic sites. The DEIS should describe all WOUS that could be affected by the project alternatives, and include maps that clearly identify all waters within the project area. The discussion should include acreages and channel lengths, habitat types, values, and functions of these waters. In addition, EPA suggests that the BLM include a jurisdictional delineation for all WOUS, including ephemeral drainages, in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the December 2006 Arid West Region Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. A jurisdictional delineation will confirm the presence of WOUS in the project area and help determine impact avoidance or if state and federal permits would be required for activities that affect WOUS.	EPA, 08/04/09
	HWR17: If a permit is required, EPA will review the project for compliance with Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the Clean Water Act ("404(b)(1)Guidelines"). Pursuant to 40 CFR 230, any permitted discharge into WOUS must be the least environmentally damaging practicable alternative available to achieve the project purpose. The DEIS should include an evaluation of the project alternatives in this context in order to demonstrate the project's compliance with the 404(b) (1) Guidelines. If, under the proposed project, dredged or fill material would be discharged into WOUS the DEIS should discuss alternatives to avoid those discharges	EPA, 08/04/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
HYDROLOGY, WATER QUALITY AND WATER RESOURCES (Continued)		
Site Drainage	HWR18: The DEIS should describe the original (natural) drainage patterns in the project locale, as well as the drainage patterns of the area during project operations, and identify whether any components of the proposed project are within a 50 or 100-year floodplain. We also recommend the DEIS include information on the functions and locations of WOUS, as well as ephemeral washes in the project area, because of the important hydrologic and biogeochemical role these play in direct relationship to higher-order waters downstream.	EPA, 08/04/09
	HWR19: You don't have any real drainages, per se. Is that correct?	Alan Manee, San Bernardino, 7/30/09
Water Quality	HWR20: The DEIS should provide information on Clean Water Act Section 303(d) impaired waters in the project area, if any, and efforts to develop and revise TMDLs. The DEIS should describe existing restoration and enhancement efforts for those waters, how the proposed project will coordinate with on-going protection efforts, and any mitigation measures that will be implemented to avoid further degradation of impaired waters.	EPA, 08/04/09
Water Use for Dust Mitigation	HWR21: Also have some concerns and questions about the, if you're going to be blading the land or if it's going to be mowed, what the water usage will be and dust mitigation issues.	April Sall, representing the Wildlands Conservancy and the California Desert Coalition, Lucerne Valley, 7/29/09
General - Water	HWR22: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] The impact of water…	Charlene Claybaugh, affiliated with the Johnson Valley Improvement Association, Lucerne Valley, 7/29/09
	HWR23: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] uses to much water	M Diane Hunnicult, Lucerne Valley, 7/29/09
Water Use for Maintenance	HWR24: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] additional use of water for maintenance	Dawn Tonioli, Lucerne Valley, 7/29/09
LAND USE		
Consistency with adopted land use plans	LU1: The DEIS should discuss how the proposed action would support or conflict with the objectives of federal, state, tribal or local land use plans, policies and control in the project areas. The term "land use plans" includes all types of formally adopted documents for land use planning, conservation, zoning and related regulatory requirements. Proposed plans not yet developed should also be addressed it they have been formally proposed by the appropriate government body in a written form (CEQ's Forty Questions, #23b).	EPA, 08/04/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
LAND USE (Continued)		
Use of public lands for renewable energy generation	LU2: Industrial-scale installations on public lands are a questionable use of multi-use lands. The study must address the uglification effect of this first installation: the effect on the values of surrounding private lands; causing the easily foreseeable sale of private lands and permitting of other public lands for other renewable energy installations; and the negative impact that this proliferation and inevitable transmission lines will have on the scenic/historic route from which they will be visible.	Betty Munson, Johnson Valley, 08/22/09
Disturbed Lands	LU3: The DEIS should describe the current condition of the land selected for the proposed project, discuss whether the land is classified as disturbed, and describe to what extent the land could be used for other purposes	EPA, 08/04/09
	LU4: We'd like to see projects done on disturbed land. And it seems like everyone always goes back to BLM because this is basically free land to corporations. And so that always seems to be where these projects line up. But it's interesting that BLM has recognized that disturbed lands are something they should be looking at because they've launched a project in Arizona to start doing it. And my question is if we can do it in Arizona where there is not as many projects being on the chopping blocks as there is in California why didn't you start here. But it should have started here looking at disturbed lands rather than starting with fairly pristine, ungraded land over off of [Santa Fe] Fire Road.	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 7/29/09
	LU5: I would like to say that the environmental community supports projects being sited on disturbed lands over pristine habitat and pristine public lands.	April Sall, representing the Wildlands Conservancy and the California Desert Coalition, Lucerne Valley, 7/29/09
Impacts of development of undisturbed public lands	LU6: The plan amendment must fully analyze the impacts of industrial development on public lands of an undisturbed nature.	The Wilderness Society, 8/21/09
Private Property Values	LU7: Project's effect on surrounding private land values.	Chuck Bell, representing LVEDA, Lucerne Valley, 08/03/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
LAND USE (Continued)		
Areas to Prioritize for Siting	LU8: ■ Lands that have been mechanically disturbed, i.e., locations that are degraded and disturbed by mechanical disturbance: – Lands that have been "type-converted" from native vegetation through plowing, bulldozing or other mechanical impact often in support of agriculture or other land cover change activities (mining, clearance for development, heavy off-road vehicle use). ■ Public lands of comparatively low resource value located adjacent to degraded and impacted private lands on the fringes of the CDCA: – Allow for the expansion of renewable energy development onto private lands. – Private lands development offers tax benefits to local government. ■ Brownfields: – Revitalize idle or underutilized industrialized sites. – Existing transmission capacity and infrastructure are typically in place. ■ Locations adjacent to urbanized areas: – Provide jobs for local residents often in underserved communities; – Minimize growth-inducing impacts; – Provide homes and services for the workforce that will be required at new energy facilities; – Minimize workforce commute and associated greenhouse gas emissions. ■ Locations that minimize the need to build new roads. ■ Locations that could be served by existing substations. ■ Areas proximate to sources of municipal wastewater for use in cleaning. ■ Locations proximate to loads centers. ■ Locations adjacent to federally designated corridors with existing major transmission lines	Audubon California, California Wilderness Coalition, Defenders of Wildlife, Desert Protective Council, Mojave Desert Land Trust, Natural Resources Defense Council, Sierra club, The Nature Conservancy, The Wilderness Society, The Wildlands Conservancy, Unknown Date

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
LAND USE (Continued)		
High Conflict Areas	LU9: ▪ Locations that support sensitive biological resources, including: federally designated and proposed critical habitat; significant populations of federal or state threatened and endangered species, significant populations of sensitive, rare and special status species, and rare or unique plant communities. ▪ Areas of Critical Environmental Concern, Wildlife Habitat Management Areas, proposed HCP and NCCP Conservation Reserves. ▪ Lands purchased for conservation including those conveyed to the BLM. ▪ Landscape-level biological linkage areas required for the continued functioning of biological and ecological processes. ▪ Proposed Wilderness Areas, proposed National Monuments, and Citizens' Wilderness Inventory Areas. ▪ Wetlands and riparian areas, including the upland habitat and groundwater resources required to protect the integrity of seeps, springs, streams or wetlands. ▪ National Historic Register eligible sites and other known cultural resources. ▪ Locations directly adjacent to National or State Park units.	Audubon California, California Wilderness Coalition, Defenders of Wildlife, Desert Protective Council, Mojave Desert Land Trust, Natural Resources Defense Council, Sierra club, The Nature Conservancy, The Wilderness Society, The Wildlands Conservancy, Unknown Date
NEPA PROCESS		
Programmatic Solar EIS	NP1: The DEIS should identify whether the proposed project is located within one of the solar energy study areas, as defined by the BLM and Department of Energy.	EPA, 08/04/09
Significance Criteria	NP2: The DEIS should clearly describe the rationale used to determine whether impacts of an alternative are significant or not. Thresholds of significance should be determined by considering the context and intensity of an action and its effects (40 CFR 1508.27)	EPA, 08/04/09
PROJECT ALTERNATIVES		
Alternative Sites	ALT1: Have you guys looked at any other possible placements for this solar generating plant instead of around here? Because you guys have also got an idea for wind turbines, you know, coming in out here.	Jeff Arnold, Lucerne Valley, 7/29/09
	ALT2: You guys ought to look at other areas and less populated areas and if, you know, you want to live in Tehachapi with the wind mills or over in Desert Hot Springs with the wind mills over there and look out your window and just see whoosh, whoosh. Well I don't want to see it.	Jim Meshard, Lucerne Valley, 7/29/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
PROJECT ALTERNATIVES (Continued)		
Alternative Sites	ALT3: You got perfect stuff over here at Highway 58 and 395. You've got a huge solar project there, all the infrastructure is there, the dirt is there, the BLM owns probably all of it. You've got Edwards Air Force Base there, millions of acres. The BLM has got millions of acres east of Yucca Valley that they can do this stuff. And I just think that Edison is just trying to take advantage of the close proximity to save running power lines so far. They're planning on running another line all the way from Morongo Valley all the way across our mountains again. And they're probably want to hook this into that. We're just really being hit here.	Jim Meshard, Lucerne Valley, 7/29/09
	ALT4: I believe that it is unnecessary for this project to be located on undeveloped BLM land. The Lucerne Valley area has thousands of acres of abandoned farmland that are already disturbed and degraded. Chevron should use some of this private land to build its project. Much of this abandoned farmland is already serviced by utility lines.	Brendan Hughes, Joshua Tree, 7/25/09
	ALT5: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] Alternative. Solar power / wind power installed on our homes	Charlene Claybaugh, affiliated with the Johnson Valley Improvement Association, Lucerne Valley, 7/29/09
Alternative Technologies/ Comparative Analysis	ALT6: The DEIS should describe how each alternative was developed, how it addresses each project objective, and how it will be implemented. The alternatives analysis should include a discussion of alternative sites, capacities, and generating technologies, including different types of solar technologies and describing the benefits associated with the proposed technology.	EPA, 08/04/09
	ALT7: The DEIS should expand the alternatives analysis to include consideration of residential and wholesale disturbed generation as an alternative. For example, consider an alternative that includes the installation of photovoltaic (PV) panels in residential and commercial areas near urban load sources.	EPA, 08/04/09
Range of Alternatives	ALT8: The BLM must thoroughly consider and present the public with a true range of alternative sites. "Reasonable alternatives should include, but are not necessarily limited to, alternative sites, capacities, and technologies as well as alternatives that identify environmentally sensitive areas or areas with potential use conflicts." We encourage the BLM to analyze an alternative project site on previously disturbed lands.	The Wilderness Society, 8/21/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
PROJECT ALTERNATIVES (Continued)		
Rooftop Solar	ALT9: Energy generated by rooftop solar systems will be more reliable, less vulnerable, more quickly installed, and cheaper.	Cynthia Anderson, Yucca Valley, 8/8/09
	ALT10: Chevron should consider installing these 45 MW of solar panels onto the rooftops of homes and businesses in the greater Victorville area. Both of these options would fit the ultimate purpose and need of the project. The need is for renewable power for the uses of people. The purpose of the project is to provide that power. Therefore both of these options should be presented and considered as reasonable alternatives to the proposed action. Indeed, BLM should determine one of these to be the preferred alternative to the action.	Brendan Hughes, Joshua Tree, 7/25/09
	ALT11: And also last thing is that in regards to changing technology we feel that distributed energy and local rooftop PV is really the way of the future. And certainly all of our desert preserves have onsite renewable energy and most are off the grid. So we support Chevron's use of rooftop and parking lot PV structures that we saw in the photographs.	April Sall, representing the Wildlands Conservancy and the California Desert Coalition, Lucerne Valley, 7/29/09
	ALT12: As alternatives to large-scale renewable facilities on public land, this project's analysis should include a quantitative assessment of the megawatts of solar power that could potentially be generated within the urban areas of demand (ie: roof top and parking lot systems) prior to any further commitment of public land resources to subsidize urban areas.	Chuck Bell representing LVEDA, Lucerne Valley, 8/3/09
	ALT13: Chevron Energy Solutions already know how to install solar panels on roof tops. I ask that they continue to do so and leave the desert alone.	Betty Munson, Johnson Valley, 08/22/09
	ALT14: Why couldn't this be warehouses and something else underneath it? Why does it have to be just taking a piece of desert and destroying it just for solar? Why couldn't it have more than just one purpose?	Dan Musetti, affiliated with Hemet Ranch, San Bernardino, 7/30/09
Technology Alternative	ALT15: You want to install Your Solar Panels in. Why not install the "Wind Mill" type power converters?	Steven Beavers, Barstow, 7/17/09
Water Quality Impacts of Project Alternatives	ALT16: DEIS should include an analysis of the potential for alternatives to cause adverse aquatic impacts such as impacts to water quality and aquatic habitats.	EPA, 08/04/09
PROJECT DESCRIPTION		
CDCA Plan Amendment	PD1. We're really concerned about what the CDCA Amendment is. Because obviously as it was mentioned before Green Path North is being planned to come through here and this project is right in that CDCA Amendment possible for that alternate corridor. And we need some understanding of what your CDCA Amendment is going to be. And it's not clear on anything that you have put out what it is going to be. Word in here just in here on the floor before the meeting says it's just to acknowledge that this is a renewable energy project but nothing in your information so far has said that. So, we need some clarification on that.	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 7/29/09
	PD2: What is the nature of the cdca amendment?	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 8/3/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
PROJECT DESCRIPTION (Continued)		
Dust Control	PD3: Now are you going to have paved roadways for access between there or are you going to leave it dirt?	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
Restoration	PD4: Also I would think the BLM on all these projects should be required, because they all have a life, when the life is over the project will go away and you should require a payment bond of 100 percent figured at what it'll probably cost in 20 years or whatever the life of the project is to restore it back to the original desert okay, to renew it.	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
	PD5: It's very important to think about the cumulative effects of the desert and how we're going to reuse the land that these projects are being sited on when that technology is obsolete so that we are maximizing the use of the lands and not disturbing anymore pristine habitat.	April Sall, representing the Wildlands Conservancy and the California Desert Coalition, Lucerne Valley, 7/29/09
	PD6: Twenty years from now this thing will probably be obsolete you know. And then what are you going to do?	Gary Hatfield, member of the Society for Conservation of Bighorn Sheep, Lucerne Valley, 7/29/09
	PD7: Bonding requirements for site reclamation/restoration.	Chuck Bell representing LVEDA, Lucerne Valley, 8/03/09
	PD8: The BLM should do a thorough analysis of the anticipated costs of decommissioning and restoring the project site. The BLM should also require bonds be purchased prior to development.	The Wilderness Society, 8/21/09
Technology	PD9: Technology is rapidly changing as we all know. And some of these projects will be obsolete by the time they are in line. And photovoltaics is possibly not in that category but it's very important to think about the cumulative effects of the desert and how we're going to reuse the land that these projects are being sited on when that technology is obsolete so that we are maximizing the use of the lands and not disturbing anymore pristine habitat.	April Sall, representing the Wildlands Conservancy and the California Desert Coalition, Lucerne Valley, 7/29/09
Transmission	PD10: I had a question as to you're going to use the Foothill Road transmission lines for electricity? Are you going to add anymore power poles to it?	Larry Meyer, Lucerne Valley, 7/29/09
	PD11: We are concerned that any new transmission corridors would come about and I understand that the first 20 megawatts is okay and then if the second phase there might need to be additional transmission.	D'Anne Albers, representing Defenders of Wildlife and the Sierra Club Desert Committee Energy Committee, Lucerne Valley, 7/29/09
	PD12: In order to support a project like this there would have to be some pretty good assurances, number one is that you're only planning on tying into the SCE line, you're not going to bait and switch and then want to tie into the proposed LADWP line that is a huge battle that we're trying to stop.	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
	PD13: It would appear that the solar project intends to use the existing SCE distribution power line. If the proposal requires an upgrade to this power line, the impacts associated with the upgrade should be addressed.	Carol Miller, Town of Apple Valley, 8/11/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
PURPOSE AND NEED		
General	PN1: The Purpose and need should be a clear, objective statement of the rationale for the proposed project. The DEIS should discuss the proposed project in the context of the larger energy market that this project would serve: identify potential purchasers of the power produced; and discuss how the project will assist the state in meeting its renewable energy portfolio standards and goals.	EPA, 08/04/09
RECREATION		
Cumulative Impacts	REC1: We are concerned about the cumulative impact of all the different projects that are hitting the desert, the wind generating plants, the solar plants, all of them and the effect they will have on recreation and on the quality of life in the desert.	Harry Baker, representing the Partnership of Johnson Valley and affiliated with CA4WDC, Lucerne Valley, 7/29/09
REGULATORY PROCESS/PUBLIC INVOLVEMENT		
	RP1: I appreciate the conflict that BLM has with the mandate from the Department of Energy to push through projects, renewable energy and their conflict with their mission statement to preserve land for the public.	Ray Pessa, member of Partnership for Johnson Valley and Friends of Giant Rock, Lucerne Valley, 7/29/09
	RP2: And there's actually several groups including Sierra Club and Defenders of Wildlife and Center of Biodiversity and the Wildlands Conservancy who have worked together and the Nature Conservancy on siting criteria for renewable energy projects. And that is publicly available to agencies and to several of the industry groups who we have already been talking with.	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 7/29/09
SOCIAL AND ECONOMIC CONSIDERATIONS		
Economic Benefits	SEC1: When this project is completed, how many like tax dollars would actually go to Lucerne Valley?	Chad Burlin, Lucerne Valley, 7/29/09
	SEC2: How much would Chevron donate to Lucerne Valley in terms of community projects and so forth?	Chad Burlin, Lucerne Valley, 7/29/09
	SEC3: Will there be any economic benefit for the residents of Lucerne Valley? Will there be employment opportunities?	Dennis Pond, Lucerne Valley, 08/03/09
	SEC4: The cost/benefit of power produced vs. from all other sources.	Chuck Bell representing LVEDA, Lucerne Valley, 08/03/09
	SEC5: Utilities, PUC and the renewable industry need to devise means to reward communities that will bear the burden of all these solar/wind plants – and in turn provide incentives for acceptance (i.e. reduced elec. rates, etc). Minimal local employment, minor amounts of property taxes and the occasional donation to some community organization do not provide adequate compensation. Even a program ensuring the County receives any sales tax revenue does not substantially benefit the affected community.	Chuck Bell representing LVEDA, Lucerne Valley, 08/03/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
SOCIAL AND ECONOMIC CONSIDERATIONS (Continued)		
Private Sector Opportunities	SEC6: Use of BLM land should not displace private sector opportunities – with the cheaper use of gov. [government] land competing w/solar plant options on private land (ie: tremendous amounts of fallowed agricultural and disturbed parcels in s. Cal. counties that cannot otherwise be developed due to water and other restrictions) - allowing landowners to make the best use of their properties – in turn providing local jurisdictions with more property tax revenue.	Chuck Bell representing LVEDA, Lucerne Valley, 08/03/09
Property Values	SEC7: Project's effect on surrounding private land values.	Chuck Bell, representing LVEDA, Lucerne Valley, 08/03/09
Project-related employment	SEC8: I saw you're going to hire something like 40 workers at like peak production and two permanent workers. I was wondering how many of those workers let's say would be local residents of Lucerne Valley?	Chad Burlin, Lucerne Valley, 7/29/09
General – Property Values	SEC9: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] The impact of … real estate values.	Charlene Claybaugh, affiliated with the Johnson Valley Improvement Association, Lucerne Valley, 7/29/09
	SEC10: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] devaluation of property values	Dawn Tonioli, Lucerne Valley, 7/29/09
	SEC11: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] property values will go down	M Diane Hunnicult, Lucerne Valley, 7/29/09
	SEC12: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] devalue property	Juanita Crouse, Lucerne Valley, 7/29/09
SOILS		
Soil Resources	S1: Chevron Energy Solutions and BLM should dedicate adequate time and resources early in the process to addressing soil resources issues adequately, including through the preparation of a detailed drainage, erosion and sediment control plan that addresses these potential impacts and provides mitigation measures that will render these hazards to a level less than significant.	The Wilderness Society, 8/21/09
TRAFFIC AND TRANSPORTATION		
Impacts to Santa Fe Fire Road	TR1: Will the Santa Fe Trail Road remain open for public access?	Gary Hatfield, member of the Society for Conservation of Bighorn Sheep, Lucerne Valley, 7/29/09
	TR2: You said Santa Fe Fire Road was going to stay open. Will it?	Roger Peterson, affiliated with myjeeprocks.com, Lucerne Valley, 7/29/09
Hwy 247 – recommended improvements	TR3: A right-turn lane on Hwy 247 would provide safer egress in this area of high-speed traffic – especially for the construction phase.	Chuck Bell, representing LVEDA, Lucerne Valley, 08/03/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
TRAFFIC AND TRANSPORTATION (Continued)		
General – Traffic	TR4: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?] The impact of … traffic…	Charlene Johnson, affiliated with the Johnson Valley Improvement Association, Lucerne Valley, 7/29/09
Traffic impacts	TR4: The Town of Apple Valley requests that BLM identify within the EIS any impacts related to traffic to Highway 18 and Bear Valley Road within the Town's Sphere of Influence and within the Town limits.	Carol Miller, Town of Apple Valley, 8/11/09
Mitigation	TR5: Any impacts that are identified through a traffic study should be mitigated.	Carol Miller, Town of Apple Valley, 8/11/09
UTILITIES		
Impact on Public Utilities	UT1: And then a more direct basis I want to know, you said, 10,000 gallons of water per year don't sound like very much to me. Are you going to be using local water systems from the community or are you going to drill your own wells or how are you going to come up with that water and is that actually realistic?	Ray Pessa, member of Partnership for Johnson Valley and Friends of Giant Rock, Lucerne Valley, 7/29/09
Transmission Line (current load, capacity, planned upgrades)	UT2: The existing transmission line's available capacity – ultimate requirement for upgrading. Net transmission loss through said line.	Chuck Bell, representing the LEDVA, Lucerne Valley, 08/03/09
	UT3: What is the present load on the 33kv line?	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 8/3/09
	UT4: Since the combined phases will need 45,000 kV of transmission capacity, how will that upgrade be addressed? I heard a lot of probables, but as these projects are not planned in a vacuum, there must be a plan of how this will be accomplished, i.e. if there is a request into SCE for upgrading this line, does that mean just restringing?	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 8/3/09
	UT5: Does the ROW application include transmission upgrade?	Claudia Sall, affiliated with the California Desert Coalition, Lucerne Valley, 8/3/09
GENERAL COMMENTS		
General Support	GEN1: We have been way too long depending on foreign oil for our energy. It's time to utilize all alternative energy, solar, wind, bio diesel, and anything else that comes along. I support the project 100%.i	Larry Mayer, Lucerne Valley, 7/29/09
	GEN2: I do support renewable energy, you know, as it is not environmentally detrimental.	Chad Burlin, Lucerne Valley, 7/29/09
	GEN3: I applaud Chevron Energy Solutions in proposing a renewable energy project.	April Sall, representing the Wildlands Conservancy and the California Desert Coalition, Lucerne Valley, 7/29/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
GENERAL COMMENTS (Continued)		
General Support	GEN4: I'm all for solar anywhere it can be installed. We have plenty of sun so the desert is the perfect place. It will help us get off our reliance on foreign oil.	Gloria Williams, Lucerne Valley, 08/15/09
	GEN5: I just wanted you to know I live in Johnson Valley and have had family owned property for 56 years and I support the Chevron Lucerne Valley project. Please continue to allow growth and investment in public lands. This is an excellent resource for generations to come.	Rich Rhor, Lucerne Valley, 08/13/09
	GEN6: Just to let you know that we do support renewable energy as long as it is not environmentally detrimental.	D'Anne Albers, representing Defenders of Wildlife and the Sierra Club Desert Committee Energy Committee, Lucerne Valley, 7/29/09
	GEN7: The proposed Lucerne Valley Solar Project is probably the best possible system to produce electricity with the least intrusion into the lives of local residents	Dennis Pond, Lucerne Valley, 08/03/09
General Opposition	GEN8: I'm very much in favor of renewable energy. What I'm not in favor of is this kind of corporation, Chevron.	Tony Malone, affiliated with Victor Valley College, MAC, and MDAQMO Lucerne Valley, 7/29/09
	GEN9: First of all I think that this project, you know, should not happen. Okay, I'm against it.	Jim Meshard, Lucerne Valley, 7/29/09
	GEN10: Solar fields are not the answer to America's energy needs.	Cynthia Anderson, Yucca Valley, 8/8/09
	GEN11: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] last desert for desert toys will have lots of roads we have used for 50 years why take it away from us.	M Diane Hunnicult, Lucerne Valley, 7/29/09
	GEN12: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] No end to putting up "many"	Juanita Crouse, Lucerne Valley, 7/29/09
General (misc.)	GEN13: Speaker stated the previous speaker [Harry Baker] expressed his concern. Baker commented on cumulative, recreation, air quality, and transportation issues.	Glen Davidson, Lucerne Valley, 7/29/09
	GEN14: I sincerely hope and pray that any licenses granted for solar electric projects contain iron-clad rules for site maintenance during the useful life of the project and site remediation and clean-up when the project reaches the end of its useful life. I would hate to think that we have made mistakes that we have done and are still doing with mining facilities. Leaving a desert site filled with abandoned junk should be unthinkable. Let's not let the rush for renewable energy be the cause of destruction of our natural beauty	Edward Wood, Golden Dale, WA, 08/15/09
	GEN15: Include the total project's phases in the analysis – not just Phase 1.	Chuck Bell, representing LVEDA, Lucerne Valley, 08/03/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
GENERAL COMMENTS (Continued)		
General (misc.)	GEN16: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] Notice all cactus's from wind farm in Palm Springs area have been removed.	M Diane Hunnicult, Lucerne Valley, 7/29/09
General – Construction and Maintenance	GEN17: [The following is a response to the question on the comment form, "What issues should be addressed in this environmental document?"] The impact of … construction, maintenance…	Charlene Claybaugh, affiliated with the Johnson Valley Improvement Association, Lucerne Valley, 7/29/09
REQUESTS FOR INFORMATION		
Project Map	Please send me a map of the project area. Please put me on the public notification list	Meg Grossglass, Off Road Business Association, 7/15/09
	Can you provide maps that delineate the boundaries of the project and list legal descriptions of the parcels?	Jim Porter, California State Lands Commission, 7/16/09
	Is there a map available on the location of this PV project?	Dennis Morrison, United States Army, 7/16/09
	Can you please send me a map of the project area?	Joseph V. Ross, United States Marine Corps 7/17/09
	Can you please send me a map of the project area?	Gary Hatfield, member of the Society for Conservation of Bighorn Sheep, 7/22/09
PROJECT NOTIFICATION LIST		
Requests to be added to Project Lists	Please put me on the public notification list.	Meg Grossglass, Off Road Business Association, 7/15/09
	Please include me on your email distribution list for CES Lucerne Valley Solar.	Jim Pugliese, 7/23/09
	Please add me to your mailing list	Sandra Fairchild, EPG, Inc., Henderson NV, 8/3/09
MISCELLANEOUS		
Offer of Services	I would like to offer my company's service for bidding on Lucerne Valley Solar Project	Matt McPherson, Heliopower, 7/2109
	We are a fending company interested in providing fencing for this project. Can you please provide me information on appropriate contacts?	Dale Marriott, FenceCorp, 7/22/09
Investment (Scam)	I need assistance in investing in your country.	Tim McCarron, Fidelity Investments, International, UK, 7/27/09

Table 1 Summary of all Comments Received (by topic)

Resource/Issue	Comment	Commenter
MISCELLANEOUS (Continued)		
Project Fund (Scam)	I wish to notify you that your long overdue project fund has been gazetted to be finally released to you through the foreign remittance department of this bank.	Adzei Bekoe, Eco Bank Intl. PLC, 8/18/09
Bidder's List	I work for a substation packer (Power Substations, Inc.) and am interested in being added to the bidders list for the Lucerne Valley Solar Project.	Jordan T. Demmien, Power Substations, Inc., July 20, 2009

4.0 DRAFT PLANNING CRITERIA

Planning criteria for consideration of the proposed CDCA Plan Amendment to provide for power generation at this site and reroute include:

a. The plan amendment will be completed in compliance with FLPMA, NEPA and all other applicable Federal and State laws, Executive orders, and management policies of the BLM;

b. The plan amendment will recognize and conform to previous site-specific planning decisions from BLM regional and bioregional plans;

c. Where existing planning decisions are still valid, those decisions will remain unchanged;

d. For the purposes of cumulative analysis, past, present, and reasonably foreseeable projects will be those alternative energy projects which have been approved, or for which a draft or final plan of development has been received, or is anticipated prior to the release of the draft or final EIS, within the CDCA;

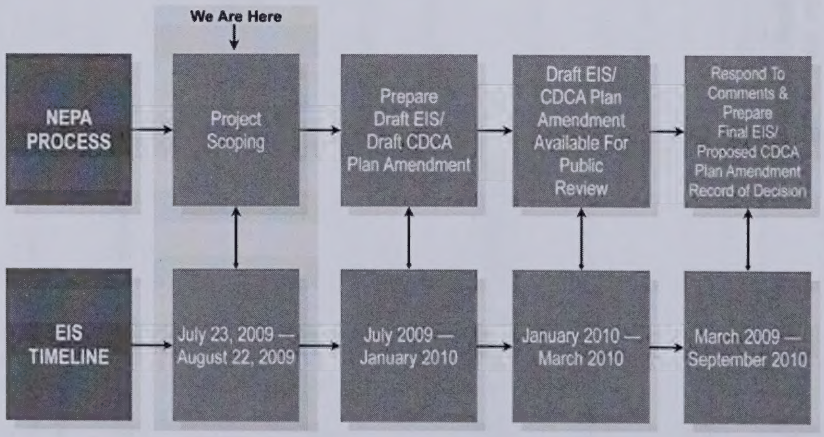
e. The plan amendment and any ROWs issued will recognize valid existing rights; and

f. Interagency and Native American Tribal consultations will be conducted in accordance with policy, and will be given due consideration. The planning process will include the consideration of impacts on Indian trust assets, other jurisdictions, and agencies.

5.0 SUMMARY OF FUTURE STEPS IN THE PLANNING PROCESS

The EIS process requires a team of interdisciplinary resource specialists to complete each step. An important part of the BLM planning process is engaging the public and relevant agencies from the earliest stages of and throughout the planning process to address issues, comments, and concerns. The steps of the planning process and agency authority and decisions to be made are described below. Figure 2 provides a summary of the EIS process and schedule.

Figure 2 Planning Process Flow Chart


We Are Here
NEPA PROCESS
Project Scoping
Prepare Draft EIS/ Draft CDCA Plan Amendment
Draft EIS/ CDCA Plan Amendment Available For Public Review
Respond To Comments & Prepare Final EIS/ Proposed CDCA Plan Amendment Record of Decision
EIS TIMELINE
July 23, 2009 — August 22, 2009
July 2009 — January 2010
January 2010 — March 2010
March 2009 — September 2010

The project site is presently managed under the CDCA Plan (BLM 1980) (as amended) and the WEMO (BLM 2006), an amendment to the CDCA Plan. Information and decisions from the CDCA Plan and the WEMO will be reviewed and incorporated in this plan amendment to the extent possible.

Identification of Issues

Issues associated with the project were identified through the scoping period, which initiated the planning process. The scoping process and the issues identified through the scoping process are documented in this scoping report and from the BLM Barstow Field Office.

Data Information and Collection

Much of the necessary resource data and information will be compiled and used from existing data on file at BLM Barstow Field Office, or through other local agencies and academic institutions. Additional data and information will be obtained from current studies being conducted by BLM and other sources to update and/or supplement BLM's.

Prepared Draft EIS/Draft Plan Amendment

Based on collected data, including public comments, a description of the project and alternatives (including no action) will be developed. Only alternatives that meet a standard of technical and economic feasibility will be considered in detail. The alternatives will be responsive to issues identified through the scoping process, fulfill the purpose and need (as described in the EIS), be consistent with agency planning documents, and address key social and environmental concerns. Impacts that could result from implementing the project and alternatives will be analyzed and measures to mitigate those impacts will be identified where appropriate.

Draft EIS/Draft CDCA Plan Amendment and Public Comment Period

Although BLM welcomes input at any time during the planning process, the next official public comment period will be open upon publication of the Draft EIS/Draft CDCA Plan Amendment, which is anticipated to be in January 2010. This document will evaluate a range of project alternatives including a "No Action" alternative and a "Preferred" alternative and will generally include the following:

- Summary
- Purpose and need for the project
- Description of alternatives (including the project)
- Affected environment
- Environmental consequences
- Mitigation measures to minimize impacts
- Other NEPA requirements

Upon completion of the Draft EIS /Draft CDCA Plan Amendment, a Notice of Availability will be published in the Federal Register and a 90-day public comment period will follow. Copies of the Draft EIS/Draft CDCA Plan Amendment will be distributed to elected officials, regulatory agencies, and interested members of the public. The document will also be available on-line at the Barstow Field Office website: http://www.blm.gov/ca/st/en/fo/barstow.html.

During this time, public hearings will be held to obtain public comments on the document. All activities where the public is invited to attend will be announced at least 15 days prior to the event in local news media. BLM will also receive written comments.

Respond to Comments, Prepare Final EIS/Proposed CDCA Plan Amendment and Record of Decision. After the public comment period, the BLM will respond to comments and prepare a Final EIS/Proposed CDCA Plan Amendment. The availability of the Final EIS/Proposed CDCA Plan Amendment will be announced in the Federal Register, and a 30-day public protest period will follow. Copies of the Final EIS/Proposed CDCA Plan Amendment will be distributed to elected officials, regulatory agencies, and interested members of the public. The document will also be available on-line at the Barstow Field Office website: http://www.blm.gov/ca/st/en/fo/barstow.html.

Following a 30-day Protest Period and concurrent 30-day Governor's Review, the BLM will resolve valid protests and prepare a Record of Decision, which is anticipated to be released in September 2010. A NOA for the ROD will be announced in the Federal Register

6.0 REFERENCES

United States Department of the Interior, Bureau of Land Management (BLM). 1980. *The California Desert Conservation Area Plan*. Bureau of Land Management Desert District, Riverside, CA.

__________. 2006. *The West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment*. Bureau of Land Management Desert District, Riverside, CA.

United States Department of the Interior. 2009 Secretary of the Interior's Secretarial Order No. 3285: *Renewable Energy Development by the Department of the Interior*. Signed March 11, 2009

species becomes listed in the future. Application requirements and issuance criteria for enhancement of survival permits through CCAAs are in the Code of Regulations (CFR) at 50 CFR 17.22(d) and 17.32(d), respectively. See also our joint policy on CCAAs, which we published in the **Federal Register** with the Department of Commerce's National Oceanic and Atmospheric Administration, National Marine Fisheries Service (64 FR 32726; June 17, 1999).

The proposed CCAA is programmatic in nature, and, under it, individual property owners who wish to participate would enroll their properties under the IDFG's section 10(a)(1)(A) permit through the issuance of a Certificate of Inclusion. The individual property owner would work with IDFG and us to develop a mutually agreeable site-specific management plan for the enrolled property. The site-specific plan will address known threats to sage-grouse through the implementation of identified conservation measures that are consistent with the participating landowner's land use activities and the CCAA. If a Certificate of Inclusion is signed and issued to a participating property owner, they would then be authorized to incidentally take sage-grouse if the species becomes listed under the ESA in the future, as long as the terms and conditions of the permit and the existing site-specific plan are followed.

The area to be covered under this proposed CCAA (Covered Area) is approximately 930,000 acres (ac) located in the West Central Planning Area (WCPA) in Washington, Adams, Gem, and Payette Counties, Idaho. Within the Covered Area, approximately 590,707 ac is non-Federally owned and would potentially be eligible for enrollment under the proposed CCAA. Sage grouse use habitats throughout the WCPA, including lekking (breeding display) areas, and nesting, brood rearing, and wintering habitats. Accurate estimates of the number of sage-grouse in the WCPA are not available.

The proposed CCAA identifies important sage-grouse use areas using a combination of known lek locations, and yearlong telemetry data identifying nesting, brood-rearing, and wintering habitats. The proposed CCAA also assumes that there are some areas where land uses or historic events have reduced habitat values so that they are no longer used by sage-grouse. However, the inherent physical factors and proximity to currently used habitat may make these areas candidates for restoration efforts.

The proposed CCAA is intended to result in benefits to sage-grouse by reducing or eliminating threats to the species on enrolled properties, and creating or maintaining habitat conditions that are suitable for all life-history stages of the species through the implementation of conservation measures. The proposed CCAA describes all of the threats to sage-grouse that have been identified in the WCPA, and a suite of potential conservation actions that could be implemented to address those threats. The conservation measures that would be implemented on any enrolled property would be identified in a site-specific conservation plan for that property. Activities that are covered under the CCAA and may be included in a site-specific plan as applicable include range and livestock management, farming operations, recreational activities, and general ranch operation and maintenance. These activities are described in more detail in the proposed CCAA.

Consistent with our CCAA Policy (64 FR 32726), the conservation goal of the proposed CCAA is to encourage enhancement and protection of suitable sage-grouse habitat on non-Federal lands by either maintaining or modifying existing land uses so that they are consistent with the conservation needs of sage-grouse. We can meet this conservation goal with the use of a CCAA by giving non-Federal landowners incentives to implement conservation measures, primarily through regulatory certainty concerning land-use restrictions that might otherwise apply should sage-grouse become listed under the ESA.

We provide this notice under section 10(c) of the ESA (16 U.S.C. 1531 *et seq.*) and the implementing regulations for NEPA (40 CFR 1506.6). We will evaluate the permit application, associated documents, and comments we receive to determine whether the permit application meets the requirements of section 10(a) of the ESA and NEPA and its implementing regulations. If we determine that all requirements are met, we will sign the proposed CCAA and issue a permit under section 10(a)(1)(A) of the ESA to the IDFG for take of sage-grouse. We will not make our final decision until after the end of the 30-day public comment period, and we will fully consider all comments we receive during the public comment period.

Dated: July 15, 2009.

David J. Wesley,

Deputy Regional Director, Region 1, U.S. Fish and Wildlife Service, Portland, Oregon.

[FR Doc. E9–17523 Filed 7–22–09; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[CACA 49561, LLCAD08000L5101 ER0000LVRWB09B3220]

Notice of Intent To Prepare an Environmental Impact Statement and Amendment to the California Desert Conservation Area Plan for the Lucerne Valley Solar Project; San Bernardino County, CA

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of intent.

SUMMARY: In compliance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the Federal Land Policy and Management Act of 1976 (FLPMA), as amended, the Bureau of Land Management (BLM) Barstow Field Office, Barstow, California intends to prepare an Environmental Impact Statement (EIS) and by this notice is announcing the beginning of the scoping process to solicit public comments and identify issues. The EIS will analyze the impacts of the Lucerne Valley Solar Plant on public lands in San Bernardino County, California. The project is being proposed by Chevron Energy Solutions (the Applicant). The applicant has requested a right-of-way (ROW) authorization to construct and operate a 45 megawatt solar photovoltaic project and connect it to the existing Southern California Edison 33 kV distribution system. Within the 516-acre solar facility, the project would include a new switchyard, control/maintenance building, and parking area. The EIS will analyze the site-specific impacts to the environment from the proposed grant of the ROW.

DATES: This notice initiates a public participation and scoping period for the EIS of at least 30 days. This scoping period will also be announced through the local news media, newspapers, and BLM's Web page (*http://www.blm.gov/ca/st/en/fo/barstow.html*). During the public scoping period the BLM will solicit public comment on issues, concerns and opportunities that should be considered in the analysis of the proposed action. The BLM expects to hold two public meetings, one in Lucerne Valley and another in the city of San Bernardino. The meeting in Lucerne Valley will take place on July 29, 2009 at the Lucerne Valley Community Center located at 33187 Highway 247 East, Lucerne Valley, California from 6:30 p.m. to 8:30 p.m. The meeting in San Bernardino will take place on July 30, 2009 at the Family Life Public Enterprise Center, Conference Room 13, located at 1505 West Highland Ave., San Bernardino, California 92411 from 6:30 p.m. to 8:30 p.m. Information about the two meetings has been announced through the local news media, newspapers and BLM Web site (*http://www.blm.gov/ca/st/en/fo/barstow.html*). Comments on issues, potential impacts, or suggestions for additional alternatives may also be submitted in writing to the address listed below. In order to be included in the Draft EIS, all comments must be received prior to the close of the scoping period or 15 days after the last public meeting, whichever is later. We will provide additional opportunities for public participation upon publication of the Draft EIS.

ADDRESSES: You may submit comments related to the Lucerne Valley Solar Project by any of the following methods:

- *Web Site: http://www.blm.gov/ca/st/en/fo/barstow.html.*
- *E-mail: LucerneSolar@blm.gov.*
- *Fax:* (760) 252–6098.
- *Mail:* BLM Barstow Field Office, 2601 Barstow Road, Barstow, California 92311.

Documents pertinent to this proposal may be examined at the BLM Barstow Field Office.

FOR FURTHER INFORMATION CONTACT: For further information and/or to have your name added to our mailing list, send requests to: ATTN: Lucerne Valley Solar Project; contact Greg Thomsen, telephone (951) 697–5237; address BLM Barstow Field Office, 2601 Barstow Road, Barstow, California 92311; e-mail *LucerneSolar@blm.gov.*

SUPPLEMENTARY INFORMATION: Pursuant to Title V of FLPMA, sites associated with power generation or transmission not identified in the BLM's California Desert Conservation Area (CDCA) Plan (1980, as amended) will be considered through the plan amendment process.

Under Federal law, the BLM is responsible for processing requests for rights-of-way to authorize solar projects and other appurtenant facilities on the land it manages. BLM must comply with the requirements of NEPA to ensure that environmental impacts associated with construction, operation, and decommissioning will be identified, analyzed and considered in the application process. This will be accomplished through preparation of a Draft and Final EIS. The BLM will utilize the NEPA commenting process to satisfy the public involvement process for Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. 470f) as provided for in 36 CFR 800.2 (d)(3).

This notice announces a period for public scoping of alternatives, issues, impacts and planning criteria associated with this project. In addition, the BLM is requesting the views of other agencies as to the scope and content of the environmental information that is germane to the statutory responsibilities or areas of expertise for those agencies in connection with the proposed project and the analysis of its impacts. Federal, State, and local agencies, as well as individuals or organizations that may be interested or affected by the BLM's decision on this project are invited to participate in the scoping process and, if eligible, may request or be requested by the BLM to participate as a cooperating agency.

The Applicant has applied for a ROW authorization to construct and operate a solar photovoltaic project on public lands. The public lands are managed by the BLM in accordance with the CDCA Plan and the West Mojave Plan, an amendment to the CDCA Plan. The 516-acre project would be built approximately 8 miles east of Lucerne Valley, San Bernardino County, California, at T. 4 N., R. 2 E., Section 19 (NE 1/4 SW 1/4, S 1/2 SW 1/4, NW 1/4 SE 1/4, S 1/2 SE 1/4), section 20 (W 1/2 W 1/2), section 29 (NW 1/4 NW 1/4), section 30 (N 1/2 NE 1/4).

The EIS will describe and analyze the proposed project and will include:

(1) Measures to avoid, minimize, or mitigate impacts on the environment;

(2) The "No Action" alternative (no project would be built); and

(3) The "no solar" alternative (lands would be determined unsuitable for one or more types of solar generation).

Through public scoping, BLM will identify various issues, potential impacts, and mitigation measures.

The BLM has identified a potential list of issues that will need to be addressed in this analysis including, but not limited to, social and economic impacts, including impacts to the public from traffic; ground and surface water quantity and quality; plant and animal species including special status species; Tribal and cultural resources; and visual resources. If approved, the solar project on public lands would be authorized in accordance with the FLPMA and Federal regulations at Title 43 Code of Federal Regulations part 2800.

The CDCA Plan (1980, as amended) requires that all power generating facilities be considered through the planning process. Planning criteria for consideration of a CDCA plan amendment to provide for power generation at this site include:

a. The plan amendment will be completed in compliance with FLPMA, NEPA and all other applicable Federal and State laws, Executive orders, and management policies of the BLM;

b. The plan amendment will recognize and conform to previous site-specific planning decisions from BLM regional and bioregional plans;

c. Where existing planning decisions are still valid, those decisions will remain unchanged;

d. The plan amendment and any rights-of-way issued will recognize valid existing rights; and

e. Interagency and Native American Tribal consultations will be conducted in accordance with policy, and will be given due consideration. The planning process will include the consideration of impacts on Indian trust assets, other jurisdictions, and agencies.

You may submit written comments on issues and planning criteria at the public scoping meeting, or you may submit them via e-mail (*see* **ADDRESSES** section above). To be most helpful, you should submit comments within 15 days after the public scoping meeting. The BLM will identify issues and will place them into one of three categories:

1. Issues to be resolved in the plan;
2. Issues to be resolved through policy or administrative action; or
3. Issues beyond the scope of this plan.

The BLM will provide an explanation in the plan as to why we placed an issue in category two or three. The public is also encouraged to help identify any management questions and concerns that should be addressed in the plan. The BLM will work collaboratively with interested parties to identify the management decisions that are best suited to local, regional, and national needs and concerns.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Tom Pogacnik,

Deputy State Director for Natural Resources, California State Office.

[FR Doc. E9–17571 Filed 7–22–09; 8:45 am]

BILLING CODE 4310–40–P

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

Glen Canyon Dam Adaptive Management Work Group (AMWG)

AGENCY: Bureau of Reclamation, Interior.

ACTION: Notice of public meeting.

SUMMARY: The Glen Canyon Dam Adaptive Management Program (AMP) was implemented as a result of the Record of Decision on the Operation of Glen Canyon Dam Final Environmental Impact Statement to comply with consultation requirements of the Grand Canyon Protection Act (Pub. L. 102–575) of 1992. The AMP includes a federal advisory committee, the Adaptive Management Work Group (AMWG), a technical work group (TWG), a Grand Canyon Monitoring and Research Center, and independent review panels. The AMWG makes recommendations to the Secretary of the Interior concerning Glen Canyon Dam operations and other management actions to protect resources downstream of Glen Canyon Dam consistent with the Grand Canyon Protection Act. The TWG is a subcommittee of the AMWG and provides technical advice and recommendations to the AMWG.

DATES AND ADDRESSES: The AMWG will conduct the following meeting:

Date: Wednesday–Thursday, August 12–13, 2009. The meeting will begin at 9:30 a.m. and end at 5 p.m. the first day and will begin at 8 a.m. and conclude at approximately 3 p.m. on the second day. The meeting will be held at the Fiesta Inn, 2100 S. Priest Drive, Tempe, Arizona.

Agenda: The primary purpose of the meeting will be for the AMWG to discuss and recommend the Fiscal Year 2010–11 biennial budget, workplan, and hydrograph. In addition, they will receive updates and discuss the following items: (1) Mid-fiscal Year 2009 expenditures, (2) Status of Grand Canyon Monitoring and Research Center projects, (3) 2007 and 2008 Biological Opinion conservation measures, (4) Colorado River Basin hydrology, (5) Future Funding Sources for Non-native Fish Control Efforts, (6) the Draft Humpback Chub Comprehensive Plan, (7) a stakeholder's perspective by the Arizona Game and Fish Department, and other administrative and resource issues pertaining to the AMP. To view a copy of the agenda and documents related to the above meeting, please visit Reclamation's Web site at: *http://www.usbr.gov/uc/rm/amp/amwg/mtgs/09aug12/index.html.* Time will be allowed at the meeting for any individual or organization wishing to make formal oral comments. To allow for full consideration of information by the AMWG members, written notice must be provided to Dennis Kubly, Bureau of Reclamation, Upper Colorado Regional Office, 125 South State Street, Room 6107, Salt Lake City, Utah, 84138; telephone 801–524–3715; facsimile 801–524–3858; e-mail at *dkubly@usbr.gov* at least five (5) days prior to the call. Any written comments received will be provided to the AMWG members.

FOR FURTHER INFORMATION CONTACT: Dennis Kubly, Bureau of Reclamation, telephone (801) 524–3715; facsimile (801) 524–3858; e-mail at *dkubly@usbr.gov.*

Dated: July 7, 2009.

Tom Ryan,

Manager, Environmental Resources Division, Upper Colorado Regional Office, Salt Lake City, Utah.

[FR Doc. E9–17526 Filed 7–22–09; 8:45 am]

BILLING CODE 4310–MN–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[LLCO07000.L16100000.DQ0000.CO–03]

Meeting Notice: Southwest Resource Advisory Council; Canyons of the Ancients National Monument Subgroup

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice.

SUMMARY: In accordance with the Federal Land Policy and Management Act (FLPMA) and the Federal Advisory Committee Act of 1972 (FACA), the U.S. Department of the Interior, Bureau of Land Management (BLM) Southwest Resource Advisory Council (RAC) Canyons of the Ancients National Monument (Monument) Subgroup, will meet as directed below.

DATES: The Southwest RAC Canyons of the Ancients National Monument (Monument) Subgroup will meet on August 14, 2009 at the Anasazi Heritage Center in Dolores, Colorado. The meeting will begin at 9 a.m. One public comment period is planned and will begin at approximately 10 a.m. The meeting will adjourn at approximately 12 p.m.

FOR FURTHER INFORMATION CONTACT: Heather Musclow, Planner, 970–882–5632, LouAnn Jacobson, Manager, 970–882–5600, or e-mail *Heather_Musclow@blm.gov,* or visit the monument Web site at *http://www.co.blm.gov/canm/.*

SUPPLEMENTARY INFORMATION: The ten member subgroup has provided recommendations to the Southwest Resource Advisory Council concerning development and implementation of a management plan developed in accordance with FLMPA, for public lands within the Monument. We plan to discuss comments received during public review of the Draft Resource Management Plan/Draft Environmental Impact Statement. An overview of the Proposed Resource Management Plan/Final Environmental Impact Statement will be presented.

The meeting will be open to the public and will include a time set aside for public comment. Interested persons may make oral statements at the meeting or submit written statements at any meeting. Per-person time limits for oral statements may be set to allow all interested persons an opportunity to speak.

Summary minutes of Committee and Subgroup meetings are maintained at the Anasazi Heritage Center in Dolores, Colorado. They are available for public inspection and reproduction during regular business hours within thirty (30) days of the meeting. In addition, minutes and other information concerning the Committee and Subgroup can be obtained from the Monument planning Web site at: *http://www.blm.gov/rmp/canmwhich.*

Barbara Sharrow,

Designated Federal Official, Colorado Southwest Resource Advisory Council.

[FR Doc. E9–17358 Filed 7–22–09; 8:45 am]

BILLING CODE 4310–JB–P

DEPARTMENT OF THE INTERIOR

Office of the Special Trustee for American Indians

Notice of Additional Tribal Consultation Meetings

AGENCY: Office of the Special Trustee for American Indians, Interior.

ACTION: Notice of Tribal Consultation Meetings.

SUMMARY: Notice is hereby given of additional Tribal Consultation Sessions

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Appendix B
Scoping Meeting Notices

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U.S. Department of the Interior
Bureau of Land Management

News Release

For Immediate Release: July 14, 2009 CA-CDD-09-55
Contact: Stephen Razo 951-697-5217; email: srazo@ca.blm.gov
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BLM Schedules Public Scoping Meetings for Solar Project in California Desert

The Bureau of Land Management (BLM) will hold public scoping meetings as part of an environmental review on the impacts of the proposed Lucerne Valley Solar Project in San Bernardino County, Calif. Chevron Energy Solutions has applied to the BLM for a right-of-way (ROW) on public lands to construct the solar photovoltaic power plant on approximately 516 acres about eight miles east of the community of Lucerne Valley.

BLM public scoping meetings will be held July 29 from 6:30 - 8:30 p.m. at the Lucerne Valley Community Center, 33187 Highway 247 East, Lucerne Valley CA 92356 and July 30 from 6:30 - 8:30 p.m. at the Family Life Public Enterprise Center, Conference Room 13, 1505 W. Highland Ave, San Bernardino CA 92411. The meetings will be part of a 30-day public scoping period that will begin later this week with publication in the Federal Register of the Notice of Intent (NOI) to conduct the environmental review.

During the scoping period, BLM solicits public comment on issues, concerns, potential impacts, alternatives, and mitigation measures that should be considered in the analysis of the proposed action. The agency then will use the public scoping comments in preparing the draft environmental documents, which are anticipated to be available for public review in late 2009.

BLM, as the lead agency under the National Environmental Policy Act, prepares the environmental impact statement (EIS) to analyze the site-specific impacts of the ROW application and a possible amendment to the California Desert Conservation Area Plan. The EIS will analyze the site-specific impacts on air quality, biological resources, cultural resources, water resources, geological resources and hazards, hazardous materials handling, land use, noise, and visual resources and transmission system engineering and transmission line safety.

If approved by the BLM, construction of the 45-megawatt (MW) thin-film photovoltaic project is proposed to begin December 1, 2010. The project would be constructed in two phases. Phase I would consist of up to 180,000 photovoltaic panels with a generating capacity of 20 MW. Phase II, with a generating capacity of 25 MW, would be similarly configured.

Related structures would include the construction of a new switchyard, control/maintenance building, and parking area. This facility would be accessed through an adjacent county road. A BLM open route on the project site may be realigned, but would remain designated as an open route. This solar project would be connected to an existing adjacent 33-kiloVolt (kV) distribution system.

Further details can be found at www.ca.blm.gov/barstow. Please e-mail any questions to LucerneSolar@`mailto:`blm.gov.

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U.S. Department of the Interior
Bureau of Land Management

News Release

For Immediate Release: July 24, 2009 CA-CDD-09-58
Contact: Stephen Razo 951-697-5217; email: srazo@ca.blm.gov
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BLM Changes Public Meeting Location for Solar Project in California Desert

The Bureau of Land Management (BLM) has changed the location of the July 29 public scoping meeting for the proposed Lucerne Valley Solar Project from the Lucerne Valley Community Center, 33187 Highway 247 to the Lucerne Valley Elementary School, 10788 Barstow Road, Lucerne Valley, CA. The meeting will be from 6:30 – 8:30 p.m.

This meeting is part of a 30-day public scoping period that began with publication in the Federal Register of the Notice of Intent (NOI) to conduct an environmental review for the proposed Lucerne Valley Solar Project in San Bernardino County, Calif.

A second public scoping meeting scheduled for July 30 from 6:30 - 8:30 p.m. at the Family Life Public Enterprise Center, Conference Room 13, 1505 W. Highland Ave, San Bernardino CA remains as scheduled.

Chevron Energy Solutions has applied to the BLM for a right-of-way (ROW) on public lands to construct the solar photovoltaic power plant on approximately 516 acres about eight miles east of the community of Lucerne Valley.

During the scoping period, BLM solicits public comment on issues, concerns, potential impacts, alternatives, and mitigation measures that should be considered in the analysis of the proposed action. The agency then will use the public scoping comments in preparing the draft environmental documents, which are anticipated to be available for public review in late 2009.

Further details can be found at www.ca.blm.gov/barstow. Please e-mail any questions to LucerneSolar@blm.gov.

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MEETING

BUREAU OF LAND MANAGEMENT

COUNTY OF SAN BERNARDINO

PUBLIC SCOPING MEETING
LUCERNE VALLEY SOLAR PROJECT

LUCERNE VALLEY COMMUNITY CENTER

33187 HIGHWAY 247 EAST

LUCERNE VALLEY, CALIFORNIA

WEDNESDAY, JULY 29, 2009

7:00 P.M.

Reported by: Troy Ray

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

APPEARANCES

David Briery, Bureau of Land Management

Lynette Elser, Bureau of Land Management

Larry LaPre, Bureau of Land Management

Mickey Quillman, Bureau of Land Management

Richard Rotte, Bureau of Land Management

Greg Thomsen, Bureau of Land Management

Juliet Don, Chevron Energy Solutions

Ralph Hollenbacher, Chevron Energy Solutions

Erec M. DeVost, Ecology and Environment, Inc.

Dave Plumpton, Ecology and Environment, Inc.

PUBLIC APPEARANCES

Chuck Bell

Paul Anthony Malone

Larry Mayer

Jeff Arnold

Harry Baker
Partnership for Yucca Valley

Glen Davidson

Ray Pessa
Partnership for Yucca Valley

Gary Hatfield

D'Anne Albers
Defenders of Wildlife and
Sierra Club Desert Committee Energy Committee

Chad Burlin

Jim Meshard

Roger Peterson

Claudia Sall

April Sall
Wildlands Conservancy and
California Desert Coalition

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PROCEEDINGS

MR. PLUMPTON: Well thank you all for coming out tonight, I think we'll get started. We'll go through a couple of introductions up here and talk about the agenda but first, thanks for coming out, we really appreciate it.

Tonight is the Lucerne Valley Solar Scoping Meeting. A little bit about some information that made it into some of the papers. There may have been a little bit of confusion about notices that were circulated. And someone who is far better to explain this than myself is Chuck Bell. If we could ask Chuck to come to the podium and just touch on this for a minute.

(Laughter.)

MR. BELL: You really want to be confused, right?

MR. PLUMPTON: No more than I am.

MR. BELL: Okay. Well apparently there was some confusion. This tonight is the Chevron Solar Plant on photovoltaic on BLM land east of Lucerne Valley.

The project that I think was probably -- and I haven't seen the newspaper -- that was heard at the Municipal Advisory Council last night and at the Economic Development Association meeting next Tuesday at five o'clock is Edison, it is Edison Mission. It is their proposed photovoltaic power plant, all on private land, fallowed ag land, about one mile due north of here, the corner of Rabbit

Springs Road and Highway 247 or Barstow Road. That's that project.

Now if you really want to get confused, talk about Canon and all those others we don't know anything about. That's whatever. But it is confusing. We're hearing bits and pieces. But that's as far as that goes. That's another separate project. That is a separate project and I think I saw one of their reps here tonight so you can talk to him.

MR. QUILLMAN: Great, thanks for clearing that up, Chuck, I appreciate that.

Ladies and gentlemen, my name is Mickey Quillman. I am the Chief of Resources and the Associate Field Manager out of the Barstow Field Office for the BLM and the Barstow Office covers this neck of the woods. We really appreciate you being here tonight.

Let me take just a second and introduce some of the folks from BLM that are currently here. David Briery back there by the door is our Public Affairs Officer. Larry LaPre is a wildlife biologist from the District. There he is right there. Lynette Elser is the District NEPA Coordinator, the National Environmental Policy Act. She makes sure we do everything the right way. Rich Rotte is a real estate person from our office there in Barstow so he's got all this figured out. Also the Project Manager for the BLM for the Chevron project is Greg Thomsen.

From Chevron Energy Solutions we have Ralph Hollenbacher. He is the Project Manager. And of course we have Juliet Don over here from Chevron as well.

And our consultants, E&E Consulting, Dave Plumpton at the table here and a couple of his folks.

And with that let's get started.

MR. PLUMPTON: Okay. As you can see on the screen, the agenda has us holding the open house until seven. We'd like to do a 20 minute presentation that covers a little bit about the project, our purpose in being here. Our purpose in asking for you to be here as well. And then we will conclude with a public comment session. Now there will be more about that later.

But briefly, if you would like to speak we'd ask that you fill out a speaker card. I've got all of the ones that have been completed to this point. Anybody who wants to can fill out another one, or if you haven't yet filled one out. But please do fill one out if you would like to speak.

The reason for this is your comments greatly inform this whole process but the administrative record for this project requires that we keep rather complete information. So understand that the information that goes onto the speaker cards becomes part of what is called the administrative record, which becomes public.

We also do this because we want to be able to attribute your comments back to you. We don't want anybody to be able to say, you missed my remark about Resource X and how this project might affect it. So please sign in at the entryway table; fill out a speaker card if you would like to provide a verbal comment.

If you would like to provide comment but don't wish to speak you can do so several different ways. You can take a comment form, fill it out and either mail it in or fax it back in.

And just the same as if you provide a verbal comment, your comments, concerns and remarks will make it into the administrative record and will help inform us during the analysis and the BLM in the completion of this environmental document.

And just lastly, we are here to get your comments on this project so thanks, once again, for coming out tonight.

MR. THOMSEN: Once again, I'm Greg Thomsen. I'm the Project Manager for the Bureau Land Management on this project. And what I'd like to do is just briefly explain to you what BLM's role is in this project.

Chevron submitted a right-of-way application to construct and operate a solar generating facility on land that's managed by the Bureau of Land Management.

Our current plan for this area potentially allows the development of an energy resources like this through a plan amendment.

BLM, you've probably been hearing a lot in the media, BLM is committed to sustainable energy development through our policies and orders after a thorough environmental analysis.

Both the United States from the president on down as well as the state of California have made commitments to develop renewable energy. And some of this will likely occur on land that's managed by BLM.

We realize there are many different types of renewable energy that you're hearing about. There's solar, there's wind, there's geothermal. And we realize that there's a number of different locations where these facilities might be sited.

Tonight what we want to talk about, the purpose of this tonight is to talk about this specific project which is for BLM to arrive at a decision down the road on whether or not to allow Chevron's application that is for a specific location and also for a specific type of energy which is solar photovoltaic.

If you look on the map on the screen the area that we're talking for and the area that BLM has received an application for is about eight miles east of here and it covers about 516 acres of BLM managed land.

Now I'd like to turn it over to Ralph Hollenbacher from Chevron to talk about the project.

MR. HOLLENBACHER: Thank you Greg. I work for Chevron Energy Solutions. For those of you who aren't familiar, we are a division of Chevron USA which is the oil company.

Although Chevron Energy Solutions the -- can you hear? I work for Chevron Energy Solutions which is a division of Chevron USA, namely the oil company.

Chevron Energy Solutions is very actively involved in energy efficiency and photovoltaic projects for a wide range of public institutional customers as well as Chevron itself.

Energy Solutions has offices nationwide, probably about 400 people. We are the largest installer of PV systems in public institutions in California with over 25 megawatts of rooftop, carport-type installations.

What we're looking at here as Greg indicated is a site at the corner of Foothill and Santa Fe Fire Trail which is about eight miles east of Lucerne Valley on 247.

It's a 516 acre property in what's, really kind of a rural area out there (speakers from audience requesting lights to be dimmed).

Should I use the other one?

MR. PLUMPTON: Ralph can you kill the lights please right behind you.

MR. HOLLENBACHER: Oh, it's the lights? Okay. The map, sorry for the map being kind of gray. We took a Google Earth Map and there is 247 coming across into Lucerne Valley.

This is Santa Fe Fire Trail. This is Foothill Road coming across. Right at the corner of Foothill Road and Santa Fe Fire Roads where we would interconnect with the Southern California Edison 33 kV line that runs down Foothill Road.

The project will be built in two phases. The first there are 516 acres and that's probably enough land to support about 45 megawatts of solar photovoltaic plant.

The first phase would be 20 megawatts electric. A megawatt is about a thousand kilowatts and generally people, a good metric is that the maximum load in a home is usually around a kilowatt. So that's enough for about twenty thousand homes.

We're proposing to start construction in a kind of metrics to the project. We're proposing to start construction in late 2010.

Overall project costs to be something like a hundred million dollars with about twenty million dollars in local content.

Peak construction force of about 40 workers. Permanent work force of two workers.

Water use, we're estimating will probably be no more than ten thousand gallons a year. It depends on how much we have to wash the panels if we have to wash the panels.

The technology we're looking at is photovoltaic, thin-film photovoltaics which is, is a fixed tilt meaning that the panels are fixed at a tilt angle of 20 to 30 degrees facing due south.

So if you're looking, that's the south, from the south you'll see the blue of the panels.

Probably they're maybe 18 inches to two feet off the ground at the low point. At the high point they're something less than six feet off the ground.

Here's the backside of the panel. The way the panels are installed, we'll be driving posts into the ground and building a rack on the posts to support the panels.

And tried to put together an artist's simulation. And it's pointed out to me that the land should be brown and not green or tan (laughter). Poor choice of color but I'll have to talk to my consultant about that.

There again is Santa Fe Fire Trail and Foothill Road. What we would be doing, Zircon Road we would square it off. But Zircon Road would remain open and it continues down through there.

You think that --

MR. PLUMPTON: Is it better with the lights off then? Okay.

That's a little bit about the project, now a little bit of why we're here.

You know that the BLM is preparing an Environmental Impact Statement to analyze and disclose the effects from the project.

So this is all about providing this level of project overview to allow you, the public and interested parties to provide the BLM with information that would be relevant to its purposes in analyzing and disclosing project effects.

So the BLM will obviously use this information to, you know, run the project through this environmental analysis and satisfy the processes that are required pursuant to NEPA one of which is coordinating the comment process to satisfy the public involvement that is needed under section 106 of the National Historic Preservation Act for example.

My company, E&E is assisting the BLM in preparing its EIS for the project. The Barstow BLM Office is the lead NEPA agent.

The EIS process is going to follow roughly five course steps. It begins with scoping which starts with the Notice of Intent.

This gets published and distributed to federal, state and local agencies and other interested parties and really begins the scoping process.

The scoping process is 30 days long within which there are two public meetings. Tonight's here in Lucerne Valley and tomorrow night's in San Bernardino.

Next comes the Draft EIS which the BLM will prepare as well as an amendment to the California Desert Conservation Area Plan.

And then this goes out for public review and comment which is the next main phase.

The Draft as well as the Plan Amendment will be available for public review during a 90 day comment period during which there will also be two more public meetings.

The Final EIS is then prepared which largely provides both the public's, a synthesis of the public's comments and how the EIS and the BLM responded to those comments.

Following this the Record of Decision is prepared after both a 30 day protest period and a 30 day governor's review period which are run concurrently.

So the schedule for the EIS as best as can be told at this point, the Notice of Intent was published on July

23rd, scoping then runs from July 23rd to August 22nd.

The Draft EIS and public comment period includes the 90 day public review period and that's anticipated on the current schedule for later this year.

The Final EIS can't be determined at this point because the mandated intervals must happen according to the end date of the proceeding phase.

So the Final EIS schedule can't be determined at this point but the Record of Decision comes 60 days after the Final EIS.

So, once again, the objectives of this entire process are to allow the public to provide BLM with their information relevant to the analysis and to identify their concerns so that the BLM can identify a reasonable range of alternatives to include in the Environmental Impact Statement so that it can openly and adequately analyze those impacts from both the proposed project and the alternatives.

And this allows the BLM to provide an adequate and defensible document to its own decision makers to render that decision in the Record of Decision.

So, again, we're here to solicit your input on the project. Please recognize that as you provide input, the more specific that you can be the easier and the more helpful it'll be for us.

The easier it will be to incorporate that input into a synthesis of the public's comments. For example, if possible rather than voice concern over biological resources, if you could name the biological resource that you have a specific or concern over it'll really facilitate incorporating comments accurately and completely.

Once again, just a really quick reminder, please if you'd like to speak fill out a speaker card. Again, understand that this becomes part of the public record.

We will take speakers in the order in which they filled out a speaker card. And we'll allow you to fill out a speaker card as long as we can keep the comment session open.

Kindly limit your comments to three minutes. If there is enough time after everyone has had a chance to comment we can, and we've got time remaining, we can allow people to provide multiple comments.

And if there's time and we've still got the room after the conclusion of this we can have an informal one-on-one question and answer session around the posters and in the back.

And, once again, just as a reminder, if you'd like to provide more extensive comment please consider taking a comment card which you could then mail or fax back in.

And with that I'll turn it back over to Greg.

MR. THOMSEN: Okay. Well with that then, you want to pull up the lights and we can get started with comments.

Paul Tony Malone.

MR. MALONE: Right here. Okay, my name is Paul Anthony Malone, Tony Malone to most of this community.

I teach renewable energy at the college, Victor Valley College.

I'm very much in favor of renewable energy.

What I'm not in favor of is this kind of corporation, Chevron.

Chevron several years ago made a commitment and a contract with Victor Valley College for a 1.5 megawatt wind turbine.

What they did, what the college did is they went ahead and they had to fight the powers that be, the Spring Valley Lake and their property association et cetera.

And then finally they got it by their board et cetera. They funded it. And then about a half a year later Chevron turned around and said, no, we're not going to do it.

They didn't give us any kind of, you know, any kind of important reason why they're not going to do it but I'll tell you I really do think that, you know, what they did was wrong and how they did it was wrong.

Because we were counting on it for a school to be able to teach, you know, renewable energy with wind turbines. A 1.5 megawatt is pretty good size.

And with them going in around here we would have been able to teach that.

Several of us teachers went down to schools in Cerritos to be able to learn how to, you know, teach that. We got information et cetera.

What Chevron did was wrong. Now if it was another company I would say, go for it. Thank you.

MR. PLUMPTON: Thank you.

And just as a reminder we're going to try and limit our comments to three minutes. At the two minute mark we'll hold up the yellow card and at three minutes, just to ensure that everybody who wants to speak can, we'll hold up a pen (laughter).

Larry Mayer, please.

MR. MAYER: My name is Larry Mayer and I also support renewable energies. I had a question as to you're going to use the Foothill Road transmission lines for electricity? Are you going to add anymore power poles to it?

MR. HOLLENBACHER: No.

MR. MAYER: No. So they'll be significant. It'll be enough to handle all the energy.

MR. HOLLENBACHER: It'll be sufficient. That will be sufficient.

MR. MAYER: Okay.

MR. HOLLENBACHER: What's there.

MR. MAYER: All right.

MR. PLUMPTON: Jeff Arnold.

MR. ARNOLD: My name is Jeff Arnold. My question is have you guys looked at any other possible placements for this solar generating plant instead of around here. Because you guys have also got an idea for wind turbines, you know, coming in out here.

MR. PLUMPTON: That's probably best left for after the comment session. What we're looking for here is comments. We want to hear about concerns, issues --

MR. ARNOLD: Okay. One big concern, okay, you guys get this thing put in, get it up and operating, what about the dust? You guys are going to be opening up over 500 acres. How much of that is going to be re-covered and resealed with the fungus that naturally grows out here under the topsoil or just under the top layer.

I'd like to know how you guys would be dealing with that because we get some hellacious easterly prevailing winds in here and you look at, you look north of town you can just see the dust clouds go across the desert.

My question is, have you guys even studied how many tons of dust or dirt will be blowing after you guys get this completed. Thank you.

MR. PLUMPTON: Thank you.

Harry Baker?

MR. BAKER: I'm Harry Baker. I'm with the Partnership of Johnson Valley. We are concerned about the cumulative impact of all the different projects that are hitting the desert, the wind generating plants, the solar plants, all of them and the effect they will have on recreation and on the quality of life in the desert.

I share the concern of the gentleman before me about the dust. And I'm also concerned about the dust on the road. For example, on Santa Fe Trail Road. Is that going to be hardened so that there will be no dust provided there so that you'll still have access or will some of the access be curtailed because of dust?

And also, further on down the line that the dust that is generated by the cement plants and that, will that have an impact on the solar plants? Thank you.

MR. PLUMPTON: Thank you.

Glen Davidson.

MR. DAVIDSON: He just expressed my concern.

MR. PLUMPTON: Thank you.

Ray Pessa?

MR. PESSA: I'm Ray Pessa from Yucca Valley also a member of Partnership for Johnson Valley, Friends of Giant Rock. I appreciate the conflict that BLM has with the mandate from the Department of Energy to push through projects, renewable energy and their conflict with their mission statement to preserve land for the public.

That's the big picture question and concern I have. All these projects that are lined up along 247 all the way to Landers.

I'm wondering if those things are going to be potentially tied in with this unit in some way if that's possible that that might be an SCE question.

And then a more direct basis I want to know, you said, 10,000 gallons of water per year don't sound like very much to me. Are you going to be using local water systems from the community or are you going to drill your own wells or how are you going to come up with that water and is that actually realistic? Thanks.

MR. PLUMPTON: Thank you.

Gary Hartfield?

MR. HATFIELD: It's Gary Hatfield. I'm here representing myself but I am a member of the Society for Conservation of the Bighorn Sheep.

And the Society is concerned primarily with Bighorn Sheep. We're volunteers for the California Department of Fish and Game.

We build and maintain wildlife drinkers all over the desert.

And we are, you know, advocates for sheep and, of course, for their habitat.

And we have our Bighorn Sheep up in the San Bernardino Mountains and we have herds out here in the Ord mountains and many of the ranges further.

I too am concerned about the cumulative effects of all of these projects.

I went out here and you can see the mural on the side of the building and they don't show any imprint of man, there's an eagle and some wild horses and beautiful country and that's why people like to move to the desert.

And that's why, you know, I'm down at the desert. I'm a hunter/conservationist and I've been on top of all these mountains and I enjoy the view and don't know that it's going to be the same with windmills on the ridges and mirrors reflecting skyward.

And, but I know you want the remarks to be site-specific and I don't know that much about that area other than to say that looking down the road this whole valley is liable to be developed. It'll fill in.

BLM land is open land, the kind of land where things do live.

And sheep may need to migrate from one range to another. If you fill up the BLM land with industrial complexes then it's going to be more difficult to do.

So that's the main concern. I don't think you can remove the cumulative effect of all of these proposals and this land rush and this race for renewable energy. And it kind of saddens me because this is so obviously facilitation of development, the pressure coming from, you know, our elected leaders and so forth at a time when much of the world has no desire to cut back on their CO2 emissions.

They're developing their economy. And we're kind of standing alone in our economy isn't doing that well.

And we're going to trade off as the other gentleman says this real treasure of the public land resource and animals that inhabit it for our future for a questionable source of energy.

And you guys are engineers. Twenty years from now this thing will probably be obsolete you know. And then what are you going to do?

So I won't take anymore of your time but, you know, you should find out about wildlife use of that area and consider how valuable that land might be in the future.

I'm also curious about, I've not been there, will the Santa Fe Trail Road remain open for public access?

Okay, thank you.

MR. PLUMPTON: Thank you.

D'Anne Albers.

MS. ALBERS: Good evening and thank you for having a scoping meeting. My name is D'Anne Albers and I'm a local resident in Twenty-nine Palms.

And I'm here representing Defenders of Wildlife and the Sierra Club Desert Committee Energy Committee.

Just to let you know that we do support renewable energy as long as it is not environmentally detrimental.

Some of our concerns have already been addressed here but I just wanted to go on record that we are concerned that any new transmission corridors would come about and I understand that the first 20 megawatts is okay and then if the second phase there might need to be additional transmission.

We are also concerned about the cumulative impacts as well.

Also water use which you've addressed and make sure that any of the biological resources surveys and any mitigation would be handled.

And we'll be providing both the Energy Committee and Defenders of Wildlife will be submitting more detailed comments. Thank you.

MR. PLUMPTON: Thank you.

Chad Burlin.

MR. BURLIN: How are you doing? My name is Chad Burlin. I'm a local resident here of Lucerne Valley. I do support renewable energy, you know, as it is not environmentally detrimental.

I have two questions. The first question is I saw you're going to hire something like 40 workers at like peak production and two permanent workers. I was wondering how many of those workers let's say would be local residents of Lucerne Valley?

And my second question is as far as let's say when this project is completed, how many like tax dollars would actually go to Lucerne Valley?

How much would Chevron, let's say, donate to Lucerne Valley in terms of, you know, let's say, community projects and so forth?

MR. PLUMPTON: That may be a questioned better asked and answered afterward. Again, we're looking for comments, but to address one of your concerns, the Environmental Impact Statement will have a socioeconomic analysis done. It's part of the NEPA analysis.

So hopefully that will address that concern.

MR. BURLIN: All right. I thank you.

MR. PLUMPTON: Thank you.

Jim Meshard?

MR. MESHARD: Good evening. First of all I think that this project, you know, should not happen. Okay, I'm against it.

I don't live far from it so that's, I got a dog in this fight I'd guess you'd say.

I think we're as many of the other people have said we're unduly over-impacted by all of these so-called wonderful solar and other projects.

They're talking about building like 100 foot tall solar mirrors out here just to a little north of here.

And then they're thinking about putting windmills in another area. And now they're planning of putting this here.

You got perfect stuff over here at Highway 58 and 395. You've got a huge solar project there, all the infrastructure is there, the dirt is there, the BLM owns probably all of it. You've got Edwards Air Force Base there, millions of acres.

The BLM has got millions of acres east of Yucca Valley that they can do this stuff. And I just think that Edison is just trying to take advantage of the close proximity to save running power lines so far.

They're planning on running another line all the way from Morongo Valley all the way across our mountains again. And they're probably want to hook this into that.

We're just really being hit here. And over in that area I ride my motorcycle and stuff over there and things and I've seen Kangaroo Rats over there. I've seen tortoises over there. I've seen other animals that, you know, I've seen the goats and the bobcats come down.

What is this going to do to them? And so I'm just thinking that you guys ought to look at other areas and less populated areas and if, you know, you want to live in Tehachapi with the wind mills or over in Desert Hot Springs with the wind mills over there and look out your window and just see whoosh, whoosh. Well I don't want to see it.

Thank you.

MR. PLUMPTON: Thank you.

Roger Peterson please.

MR. PETERSON: Good evening. My name is Roger Peterson and I thank you for holding this meeting.

I have a few comments. In order to support a project like this there would have to be some pretty good assurances, number one is that you're only planning on tieing into the SCE line, you're not going to bait and switch and then want to tie into the proposed LADWP line that is a huge battle that we're trying to stop.

As a previous just mentioned because of all the, what they're doing to our, it'll be blight out here.

I am pleased that they're low profile. Another proposal north of town here was 300 foot tall solar panels on thousands of acres which would look like the New York skyline. So I'm happy about that.

And Santa Fe Fire Road you said was going to stay open. A couple of questions some people brought up is I'm concerned about dust mitigation also. That's 518 acres that are cleared.

Now are you going to have paved roadways for access between there or are you going to leave it dirt? That would be something that I think the BLM needs to look at very closely for air quality.

Also the Mojave Desert is riddled with earthquake faults so I'm just curious, you know, if the BLM is going to require a geological study of the area to make sure that it's stable enough. We have a lot of unstable land out here.

Also that in the studies they should be looking at that area over there is prone to flash flooding. I mean flash flooding enough to close the highway.

And so now you're going to take 5,000 or, excuse me, 500 acres and try to divert the water around that. Your plans need to show how you're going to mitigate that, the potential for flash flood and erosion and damage that that will cause okay.

Also I would think the BLM on all these projects should be required, because they all have a life, when the life is over the project will go away and you should require a payment bond of 100 percent figured at what it'll probably cost in 20 years or whatever the life of the project is to restore it back to the original desert okay, to renew it.

So I'm, and I'm concerned about the cumulative effect. You know if this was a stand alone project I'd be all for it. You can't see it from until you're right on top of it on the highway, Santa Fe Fire Road is open to give us access into the land behind it but the problem is BLM is the cumulative effect of all these projects.

And this place is going to be disgusting if it looks like Tehachapi or Desert Hot Center, Desert Hot Springs. That's what it's going to look like if the federal government allows all these projects that are proposed to come in.

Last I heard there was a hundred wind mill projects or wind generator projects. And I haven't even heard the number of solar projects. Thank you very much.

MR. PLUMPTON: Thank you.

Claudia Sall.

MS. SALL: Hi, my name is Claudia Sall. I'm from Pioneer Town, California and I've been following this, this proposed project for several reasons.

One of them, of course, we're all concerned about these cumulative effects that are on, keep speaking about. And part of this is because BLM has not done any wildlife connectivity studies. They're being left to private non-profits to do. For instance, Defenders of Wildlife and the Wildlands Conservancy.

So we really don't know what the movement is that's going to be interrupted by this first solar project. And looking at your solar programmatic you're planning a lot more along this 247 corridor.

And so basically you may be cutting off a whole corridor there and not even knowing until after the facts.

So we have urged that you do a full cumulative study of the desert and not just the solar programmatic to include things like the Ivanpah Airport and some of the wind projects and some of the really developments that are happening in the California desert.

And that hasn't been done. And so we're piecemealing that. And we're very concerned about that.

The other thing, in your bulletin you talk about a possible CDCA Amendment. You talk about a will be a CDCA Amendment. We're really concerned about what that is.

Because obviously as it was mentioned before Green Path North is being planned to come through here and this project is right in that CDCA Amendment possible for that alternate corridor.

And we need some understanding of what your CDCA Amendment is going to be. And it's not clear on anything that you have put out what it is going to be.

Word in here just in here on the floor before the meeting says it's just to acknowledge that this is a renewable energy project but nothing in your information so far has said that. So, we need some clarification on that.

Of course, quality, the air quality is the big concern. We have lots of land, little water and probably promise of a lot less with climate change coming in. So quality of, air quality and dust mitigation are always a big concern on these.

And, finally one of the last things I'd like to bring up is what some of the folks talk about with the disturbed land. We'd like to see projects done on disturbed land. And it seems like everyone always goes back to BLM because this is basically free land to corporations.

And so that always seems to be where these projects line up. But it's interesting that BLM has recognized that disturbed lands are something they should be looking at because they've launched a project in Arizona to start doing it.

And my question is if we can do it in Arizona where there is not as many projects being on the chopping blocks as there is in California why didn't you start here. It should have started here not a question. But it should have started here looking at disturbed lands rather than starting with fairly pristine, ungraded land over off of Fire Road.

And although the gentleman said it was brown out there one of the oldest living plants, the Creosote plant lives out here. It has a small reserve and it's covered in this, where this project is being sited.

So definitely underestimated what this project, where this project should be sited and thinks it needs to be removed to a different area. Thank you.

MR. PLUMPTON: Thank you.

April Sall?

MS. SALL: Good evening, thank you for the opportunity to speak tonight.

And I applaud Chevron Energy Solutions in proposing a renewable energy project. Although we do have concerns about the specific location and some of the transmission questions.

I am a conservation director for the Wildlands Conservancy. I also chair the California Desert Coalition.

And both organizations are highly in favor of renewable energy.

We support the greening of America's power supply and of California's certainly and feel that there's a right way to do this. And certainly a wrong way.

And that's part of the feeding frenzy that is occurring throughout the desert for public lands.

And I think that we support projects that are green in application and there's many criteria to that.

And there's actually several groups including Sierra Club and Defenders of Wildlife and Center of Biodiversity and the Wildlands Conservancy who have worked together and the Nature Conservancy on siting criteria for renewable energy projects.

And that is publicly available to agencies and to several of the industry groups who we have already been talking with.

There was a project brought up earlier that was proposed by Mission Energy, Edison Mission Energy. And I understand that project is being proposed on disturbed land and private land.

And I would like to say that the environmental community supports projects being sited on disturbed lands over pristine habitat and pristine public lands.

We're very concerned about the transmission tie in issues. You've heard here from many individuals tonight.

There's great concern over LADWP's proposed Green Path North Project. A 500 kV transmission line that is proposed along the contingent corridor and the California Desert Conservation Area that has many solar proposals and a few wind proposals along its alignment through the high desert here and from Morongo Valley, actually Desert Hot Springs, out to Hesperia.

And so any projects that would possibly facilitate that transmission line are of great concern and of opposition to many of the groups here.

Also have some concerns and questions about the, if you're going to be blading the land or if it's going to be mowed, what the water usage will be and dust mitigation issues.

And the general discussion about cumulative impacts of these projects as you're well aware there is a land rush in the California Desert for over 1.7 million acres depending on which spreadsheets you're looking at for the BLM.

And technology is rapidly changing as we all know. And some of these projects will be obsolete by the time they are in line.

And photovoltaics is possibly not in that category but it's very important to think about the cumulative effects of the desert and how we're going to reuse the land that these projects are being sited on when that technology is obsolete so that we are maximizing the use of the lands and not disturbing anymore pristine habitat.

Mother Nature is not making anymore pristine lands. So we need to be careful and make thoughtful decisions about what we have.

And also last thing is that in regards to changing technology we feel that distributed energy and local rooftop

PV is really the way of the future.

And certainly all of our desert preserves have onsite renewable energy and most are off the grid. So we support Chevron's use of rooftop and parking lot PV structures that we saw in the photographs. Thank you.

MR. PLUMPTON: Thank you.

Were there any other speakers?

Okay, with that I'll turn it back over to Greg.

MR. THOMSEN: Well I also would like to thank all of you for coming out tonight. I mean the good showing shows clearly that you care a lot about the land out here and about this project so, thank you.

Your comments will definitely help us write a better Draft Environmental Impact Statement as we analyze this proposed project.

So as it's been said, if you have any additional comments please submit them anyway that you choose whether it's through email or through regular letter or any other means. Definitely putting something in writing is important though.

We do look forward to seeing you again. After we've completed the Draft Environmental Statement we'd like to sit down with you and have you help us review it at that point.

We anticipate that would probably be towards the end of this year.

With that we're actually running a little bit early tonight so certainly we'll all be around for awhile. So if you have any questions, we deferred a few of your questions until after the meeting. And so we'd certainly like to entertain those now.

So thanks again everybody.

(Thereupon, the July 29, 2009, Public Scoping Meeting of the Bureau of Land Management was adjourned at 7:48 p.m.)

--oOo--

CERTIFICATE OF REPORTER

I, TROY RAY, an Electronic Reporter, do hereby certify:

That I am a disinterested person herein; that the foregoing Bureau of Land Management, County of San Bernardino, Public Scoping meeting was reported by me and thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties in this matter, nor in any way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 11th day of August, 2009.

Troy Ray
Official Reporter

MEETING
BUREAU OF LAND MANAGEMENT
COUNTY OF SAN BERNARDINO

PUBLIC SCOPING MEETING
LUCERNE VALLEY SOLAR PROJECT

FAMILY LIFE ENTERPRISE CENTER
CONFERENCE ROOM 13
1505 WEST HIGHLAND AVENUE
SAN BERNARDINO, CALIFORNIA

THURSDAY, JULY 30, 2009
7:00 P.M.

Reported by: Troy Ray

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

APPEARANCES

Lynette Elser, Bureau of Land Management

Mickey Quillman, Bureau of Land Management

Greg Thomsen, Bureau of Land Management

Roxie Trost, Bureau of Land Management

Juliet Don, Chevron Energy Solutions

Ralph Hollenbacher, Chevron Energy Solutions

Erec M. DeVost, Ecology and Environment, Inc.

Dave Plumpton, Ecology and Environment, Inc.

PUBLIC APPEARANCES

Dan Musetti

Alan Manee

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PROCEEDINGS

MR. PLUMPTON: I'm Dave Plumpton. I work for Ecology and Environment. We are an environmental consulting firm working on behalf of the BLM. And I'll try and facilitate the discussion tonight.

With us also is Roxie Trost who is leading the effort for the BLM, Ralph Hollenbacher from Chevron Energy Solutions, and Greg Thomsen also with the BLM.

And I suppose I should let you introduce yourselves and a little bit about your role here.

MS. TROST: Okay, I'm Roxie Trost and I'm the Field Manager for the Barstow Field Office.

And my office has the overall responsibilities for this project.

So afterwards if you'd like to talk with me or any member of the staff please do so. We can hopefully answer any questions or any concerns that you might have.

Also with us we have Lynette Elser from the BLM. She is the NEPA lead on this project.

And we have Rich Rotte who is the realty specialist. And he's also the realty lead on this project.

We also have Juliet Don who is from Chevron. She's the public affairs representative with us here tonight.

And I think that's it.

MR. PLUMPTON: Okay. Well a little bit about the agenda. We had a brief open house for some questions and answers. We have about a 20 minute presentation planned during which we'll provide an overview of the project and that will lead into a comment period.

Please, if you haven't yet signed in at the door there's a sign-in sheet. And that's really the best and only way we have of tracking attendance at these meetings.

We also, as you know, have a comment period. And if you'd like to provide a comment please fill out a speaker card.

If you would like to provide comments but don't wish to speak there's also a comment form that can be used if you'd like to mail or fax in your comments from home later or leave us more extensive written comments here.

Please understand that this information becomes part of the administrative record for the project. So the information that you provide will become public.

Please hold your comments to the comment period as well. And, as I said, this is all about getting your input on the project. You live here and you've got issues that you'd like to address, concerns that you'd like to voice. And that's what the comment period is about.

But we'll hold question and answer-type dialogue for after the session if there's time. And it sure looks like there will be.

So thanks very much for attending. Roxie, do you want to provide a little bit more about, next slide please Erec. Okay, there we go. Or is this Greg?

MR. THOMSEN: Greg.

MS. TROST: This is Greg.

MR. THOMSEN: I'm Greg Thomsen, also with the Bureau of Land Management. I'm the Project Manager for this project, representing BLM.

And what I'd like to do initially is just talk about what is the Bureau of Land Management's role in this.

Chevron file an application for a right-of-way with us to construct and operate a solar generating facility on land that's managed by the Bureau of Land Management.

Currently our land use plan for this area allows for, potentially allows for, renewable energy projects with an amendment to the plan.

As an agency BLM is committed to sustainable energy development, which is through our policies and through our orders, after we can do a thorough environmental analysis.

And I'm sure that you have been hearing that the both United States and the state of California have committed to develop renewable energy. And some of this, no doubt, will occur on lands that are managed by BLM.

We realize that there are a variety of types of renewable energy. There's geothermal, there's wind, there's solar and we also realize that there's quite a variety of locations where these facilities might be sited.

So the purpose of the project, or this project though, is to make a decision, for BLM to make a decision on Chevron's application, which is for a specific location and a specific technology, which is solar photovoltaic.

And then just briefly, if you look at the map up there you'll see that the application area that BLM has received proposes to develop 516 acres of federal land managed by BLM.

And it's located about eight miles east of the community of Lucerne Valley.

At this point I'd like to turn it over to Ralph Hollenbacher from Chevron to tell you more about the project.

MR. HOLLENBACHER: Thanks Greg.

First of all I'd like to introduce you to Chevron Energy Solutions who I work for. Chevron Energy Solutions is the sustainable energy arm of Chevron USA, meaning the oil company.

We've worked with public sector clients as well as with Chevron Corporation in a number of energy effeciency and photovoltaic projects.

Right now Chevron has about 400 professionals in offices nationwide, about two dozen locations across the US.

We are currently the largest installer of PV systems in public institutions in California with over 25 megawatts of PV installed, mostly in rooftop and carport applications.

The project itself, as Greg indicated, is eight miles from the town of Lucerne. Can everyone hear me?

To orient you, the town of Lucerne Valley is here. This is 247 or Old Woman Springs Road. And about eight miles down Old Woman Spring Road there's Santa Fe Fire Trail. And Santa Fe Fire Trail runs down through here. A cross road is Foothill Road. And that runs along here. And this is the project site, the proposed project site in green. It's 516 acres.

The transmission interconnection, there's a 33 kV, Southern California Edison line running down Foothill Road. And we would simply interconnect with that line at the corner of the project site.

And the power would flow back to the Cottonwood Substation which is at the corner of Cap Rock Road and 18.

The roads in the project site and the project development, we would upgrade the Santa Fe Fire Trail and reroute, there's another road here, Zircon Road. We would reroute that and kind of square it off a little bit but both roads will remain in operable at all times, accessible and operable, you know, during construction and after completion of the project.

In all the 516 acres, we project that that could handle about 45 megawatts of solar PV. We are looking at a thin-film PV, fixed-tilt application.

The first phase that we're looking at would be 20 megawatts electric. We're looking for construction to start sometime in the fourth quarter of 2010.

Project metrics, it's, the first phase would be about a 100 million dollar project. We're estimating about 20 million in local content.

Peak construction workforce, 40 workers maybe more depending on how the construction is organized.

Permanent workforce of about two workers.

Estimated water use of about 10,000 gallons a year. And that is merely to, you know, clean off the, you know, remove dust from the panels if needed, if required.

Here's a view of the panels. And the panels will be facing south. So this face, the face of the panels is facing south, due south.

And it's at a fixed-tilt of something between 20 and 30 degrees. This looks like a 30 degree tilt here.

And this is the, this is the back of the row which simply shows the supports are simply H-beams driven into the ground, typically H-beams driven into the ground. And a frame is built on the H-beams.

And we gave a visual simulation of what the site would look like at full build out.

I've been told that it's never green out in Lucerne Valley so the background should be brown. But the person that drew this was in Minnesota (laughter). Occupational hazard.

MR. PLUMPTON: Okay that's a little bit about the project. Now a little bit more about why we're here.

As you know BLM is preparing an Environmental Impact Statement for the project. And this is all about providing you with an overview of that project to allow you an opportunity to voice any concerns that you might have.

And the BLM will obviously use these concerns and other information provided to help refine the range and scope of, the alternatives are also analyzed along with the project itself.

And also to satisfy other processes such as the public involvement process for the National Historic Preservation Act.

A little bit more about the environmental review that'll take place. The preparation of the EIS will really follow five rough phases.

Scoping, which we're in now, was initiated with the publication and distribution of the Notice of Intent. This was distributed to state, federal and local agencies as well as interested parties. And as I said, really initiates the public scoping process ,which lasts 30 days and includes two public hearings. Last night's was held in Lucerne Valley and, of course, tonight.

The next step is the Draft Environmental Impact Statement and amendment to the CDCA, California Desert Conservation Area Plan.

When this is completed it too goes out for public review during a 90 day public comment period which, during which there will also be two public hearings to review the Draft.

Upon receipt of all public comments on the Draft the Final EIS will be put together, which includes a synthesis of the public's comments as well as how those comments are addressed in the Final.

Following this comes the Record of Decision. This includes a 30 day protest period and concurrent 30 day governor's review period.

After that the BLM will, decision makers will issue the Record of Decision for the EIS.

So the schedule as it is now includes the Notice of Intent which went out July 23rd, and again, it's a 30 day scoping period which will end August 22nd.

Next the Draft EIS and its own public comment period, again 90 days. So that's anticipated to end later this year.

The Final EIS really can't be determined now while some of those intervals are prescribed and fixed in length. When those intervals are initiated depends on the completion of the task that precedes that.

So the exact schedule for the later milestones in this process can't be predicted with accuracy at this point.

Obviously the objectives, again, are to allow you to comment and provide information on the project so that the BLM can identify the range of alternatives that should be included with the proposed project.

And a big part of that is geared at identifying ways that we could either avoid or minimize impacts associated with the project.

And, again, this is so that the BLM can render a full, open, honest and defensible environmental document for the decision makers use.

With that we're going to wrap up the presentation here and open it up to your comments.

Once again, just a couple of brief reminders and guidelines, if you like. We're interested in your comments. That's the reason for holding these scoping meetings.

But please do fill out a speaker card if you'd like to provide a comment. And, again, understand that the information on that card does become part of the administrative record.

I don't know how many speakers we'll have. But if we have more than one please provide your name clearly. Understand that a transcript is being collected of this meeting to provide a full record of the discussion that occurs here.

And, again, for any who would like to provide comments but not provide them verbally we do have comment cards that will allow you to write out your comments and either leave them with us or mail or fax them in later.

Has anyone filled out a speaker card and wishes to speak? Take your time.

At last night's meeting that was held in Lucerne Valley we had a turnout of at least 78 people. The sign-in sheet said 78 people and I think the head count was something a little over 110. So there was an awful lot of good, local participation.

We had a lot of really good comments. And then informal question and answer breakout sessions, if you like, that aren't captured in the transcript that's being collected but which allowed for a lot of information about specifics of the project. Thank you.

Dan Mussetti.

MR. MUSSETTI: Yes. Howdy.

MR. PLUMPTON: Thank you.

MR. MUSSETTI: You know I really didn't come here to comment in a negative way on it but, you know, this is BLM property and it's, to me I'm more interested in the environmental aspects of the property.

And it seems to me that this shouldn't affect animals very much if you could do something to leave the vegetation or separate them a little bit. Or if not, I mean, why couldn't this be warehouses and something else underneath it. Why does it have to be just taking a piece of desert and destroying it just for solar? Why couldn't it have more than just one purpose?

If we're going to lose some BLM land why not -- you know, if you can't do something to enhance the environment when we do it why we couldn't do something that would, be used for something else?

Because there's a lot of other things that could be used underneath this. And that's the only comment I really have on it.

MR. PLUMPTON: Thank you.

Alan Manes, please.

MR. MANEE: M-A-N-E-E, Manee. Or for six and a half years in the Army, Manny (laughter). Well it's just not Manes.

MR. PLUMPTON: Thank you.

MR. MANEE: Good evening.

Just a couple of quick questions. I'm familiar with wildlife biologists for the state of California. I also run a private consulting firm.

This is probably not really critically important. I have two questions. The first one is not critically important.

Mr. Thomsen you're a private consultant that has been --

MR. THOMSEN: No, I'm a Bureau of Land Management employee.

MR. MANEE: Okay. That was my confusion. That's very minor. That's not really important. I'm just curious.

MR. THOMSEN: Okay.

MR. MANEE: My question is, is that, what is the category of, first part of the question, it's a four part question. First thing is, what is the category now for Desert Tortoise in this area? Is it density category 3, 4, category 1? What is the category for this property in terms of the occurrence of Desert Tortoise? Does anybody know?

MR. THOMSEN: It's Category 3 Habitat. There have been surveys done on the ground, you know, looking for tortoises. So it is tortoise habitat.

MR. MANEE: I'm sure it's ongoing. You probably have been doing some work on it all along.

MR. THOMSEN: Right. It's actually been completed. So it's -- tortoise habitat is not critical habitat but it is tortoise habitat, Category 3.

MR. MANEE: Right, I know, Category 3 is not critical.

What is the, who is the consulting firm, do you know?

MR. THOMSEN: Chambers.

MR. MANEE: Chambers did the work, okay.

Ddo you know roughly when the surveys were done? Just roughly. Were they started in the Spring?

MR. HOLLENBACHER: The Spring, February through May.

MR. MANEE: Yeah, when the vegetation appears --

MR. ROTTE: I think one of the, one of them was, one of the rare plants was done in June because it's a late bloomer.

MR. MANEE: It's a late bloomer, yeah. I know which one you're talking about. It didn't seem to be from just the scant look that I've seen from the aerial, looks like you have a very uniform topography.

You don't have any real drainages, per se. Is that correct?

MR. THOMSEN: That's right.

MR. MANEE: And, is there any occurrence or findings of burrows on the side at all?

MR. ROTTE: Which one?

MR. MANEE: Desert Tortoises.

MR. THOMSEN: There were some burrows and there were a few tortoises either on or adjacent to this site. And there will be a technical report that will be completed shortly. And then that will be, you know, some of the key information put in the Draft Environmental Impact Statement.

MR. MANEE: Okay.

MR. HOLLENBACHER: It's in the area of concern but not specifically on the site.

MR. MANEE: Right, so --

MR. HOLLENBACHER: They were looking for burrows, active burrows.

MR. MANEE: Right now you're just ballpark estimate would be there'd be minor mitigation for the removal of those species and maybe any plant species that you've located.

So you're not anticipating a great deal of mitigation on this property at this point.

MR. THOMSEN: Well you know there's different types of mitigation. There's compensation for loss of habitat as well as there's mitigation for any animals that are present. So certainly there will be potentially some of both of those types of mitigation for tortoise.

MR. MANEE: In the implementation and process of carrying out the responsibilities of BLM do you -- are you required, I know you are generally under NEPA, but are you required to look how far out that cumulative impacts could occur from other types of facilities or other types of proposed development as it addresses this site?

Are you required to go out a certain number of feet, miles, kilometers, whatever it is, to evaluate any other associated impacts?

MR. PLUMPTON: I think the best approach to doing a cumulative impacts assessment is to look at it by resource and apply the scale that makes the most sense for that resource.

I don't think that one size fits all for cumulative impacts assessment. But certainly we're going to, you know, reasonably foreseeable, is the test there.

And I don't know that we could really comment on the scale at which all other resource areas will be looked at for cumulative impacts at this point.

Does that answer --

MR. MANEE: I think it does. I don't completely agree with what you're saying. Cumulative impacts are always more significant when they're in higher densities.

So one of the first things that you'd look at, I would think, is at any other projects you know to be occuring within at least a half mile of this property or project.

Secondly, I think right now, and I've lost count, and I know BLM, like any other state or federal agency has regions and areas, I'm not sure where you go but this I think 36, if we take the deserts of Southern California, I think there's 36 active projects right now of similar or other type of facility, not necessarily all solar.

And I'm just concerned how that plays out in the big picture. But cumulative would always start with some area immediately surrounding the area. And it could be a half mile or mile, whatever. Because that would be more of a concern if you knew of projects that were anticipated or reasonably likely to be anticipated in the immediate area.

Now you do have other, like I said, because of so many solar projects that are out there you could even say in your district consider other additional projects.

I just was was wondering where you were on your thinking. And if it's too preliminary that's fine. It's just one of the concerns I have.

So basically that's all I have. Thank you so much.

MR. PLUMPTON: Thank you.

Okay, why don't we do that. We'll take a short break. Maybe we can get some question and answer going. And then if anyone would like there's plenty of time to submit additional comments. Thank you.

(Thereupon a short break taken off the record.)

MR. PLUMPTON: Okay. So we may close up the meeting here unless there are any other people who would like to provide comment. Has anybody else filled out a speaker card or does anybody else wish to provide comment?

Okay, well thanks very much for coming out. We sure appreciate your participation. And we will adjourn the meeting here at 7:37. Thank you.

(Thereupon the July 30, 2009, Public Scoping Meeting of the Bureau of Land Management was adjourned at 7:37 p.m.)

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CERTIFICATE OF REPORTER

I, TROY RAY, an Electronic Reporter, do hereby certify:

That I am a disinterested person herein; that the foregoing Bureau of Land Management, County of San Bernardino, Public Scoping meeting was reported by me and thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties in this matter, nor in any way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 12th day of August, 2009.

Troy Ray
Official Reporter

Appendix E
Scoping Meeting Materials

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Bureau of Land Management (BLM)
Public Scoping Meeting
Lucerne Valley Solar Project EIS

July 29, 2009: Lucerne Valley Elementary School,
10788 Barstow Road, Lucerne Valley, CA
and
July 30, 2009: Family Life Public Enterprise Center,
Conference Room 13, 1505 West Highland Avenue, San Bernardino, CA

AGENDA

6:30 – 8:30 p.m.

6:30 to 7:00 p.m.	**Open House**	
7:00 – 7:20 p.m.	**Presentation**	
	• Welcome	Dave Plumpton, E&E
	• Introductions	Roxie Trost, BLM
	• Project Overview	Greg Thomsen, BLM Ralph Hollenbacher, Chevron Energy Solutions
	• Meeting Purpose	Dave Plumpton, E&E
	• Environmental Review Process	Dave Plumpton, E&E
	• Other Opportunities for Public Comment	Dave Plumpton, E&E
7:20 – 8:30 p.m.	**Public Comment**	**PUBLIC**
	• Closing Remarks	Greg Thomsen, BLM

Documents Currently Available		**BLM Documents are available at:** http://www.BLM.gov/ca/st/en/fo/barstow.html
For More Information		Greg Thomsen, BLM Program Manager, 951-697-5237

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Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

Bureau of Land Management

Public Scoping Meeting

Lucerne Valley Solar Project EIS

Lucerne Valley, CA – July 29, 2009

SIGN-IN SHEET

Presentation starting promptly at 7:00 PM ***(PLEASE PRINT LEGIBLY)***

NAME	AFFILIATION	Mailing ADDRESS	PHONE	EMAIL	Do you want to be on the Mailing List?

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Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety

Bureau of Land Management
Public Scoping Meeting
Lucerne Valley Solar Project EIS
Lucerne Valley, CA
July 29 2009

COMMENTS

Thank you for participating in tonight's Public Scoping Meeting on the Lucerne Valley Solar Project EIS

Your comments on the scope and focus of the environmental review are encouraged.

Name (please print legibly): ____________________

Affiliation (if applicable): ____________________

Phone: ____________________ Email: ____________________

Mailing Address: ____________________

City, State, Zip: ____________________

COMMENTS:
What issues should be addressed in this environmental document?

Turn in Comments during this meeting or

Send comments to: BLM California Desert District Office, attn: Greg Thomsen, Program Manager, 22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553 or by e-mail at LucerneSolar@blm.com

COMMENTS *(Continued)*

Bureau of Land Management

Public Scoping Meeting

Lucerne Valley Solar Project EIS

San Bernardino, CA – July 30, 2009

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

SIGN-IN SHEET

Presentation starting promptly at 7:00 PM ***(PLEASE PRINT LEGIBLY)***

NAME	AFFILIATION	Mailing ADDRESS	PHONE	EMAIL	Do you want to be on the Mailing List?

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Bureau of Land Management

Public Scoping Meeting

Lucerne Valley Solar Project EIS

San Bernardino, CA

July 30 2009

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety

COMMENTS

Thank you for participating in tonight's Public Scoping Meeting on the Lucerne Valley Solar Project EIS

Your comments on the scope and focus of the environmental review are encouraged.

Name (please print legibly): ____________________

Affiliation (if applicable): ____________________

Phone: ____________________ Email: ____________________

Mailing Address: ____________________

City, State, Zip: ____________________

COMMENTS:

What issues should be addressed in this environmental document?

Turn in Comments during this meeting or

Send comments to: BLM California Desert District Office, attn: Greg Thomsen, Program Manager,
22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553 or by e-mail at LucerneSolar@blm.com

COMMENTS *(Continued)*

Example of ground-mounted solar field

Chevron

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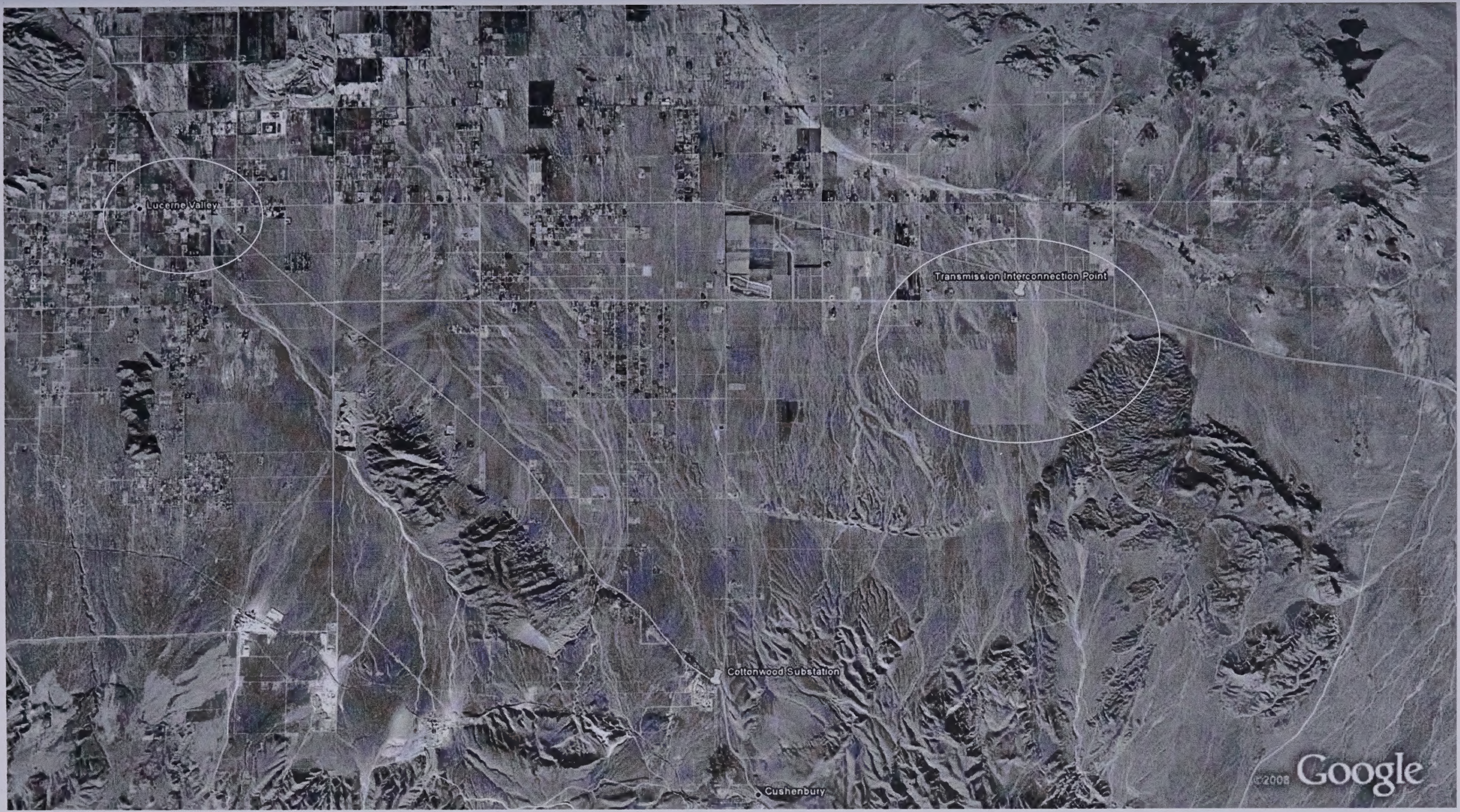

Location of proposed Lucerne Valley Solar Project

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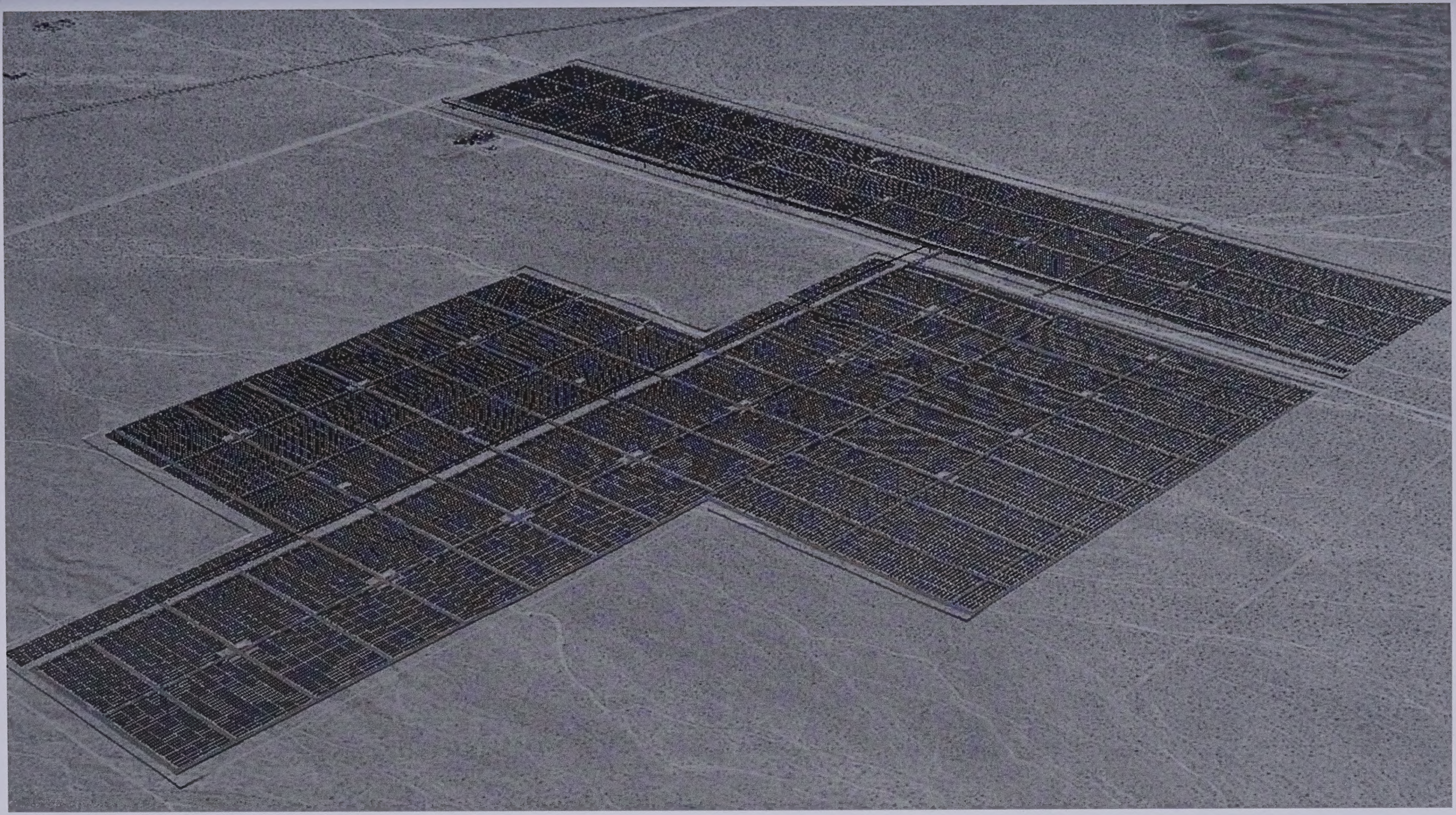

Aerial view of proposed Lucerne Valley Solar Project (simulated)

Chevron

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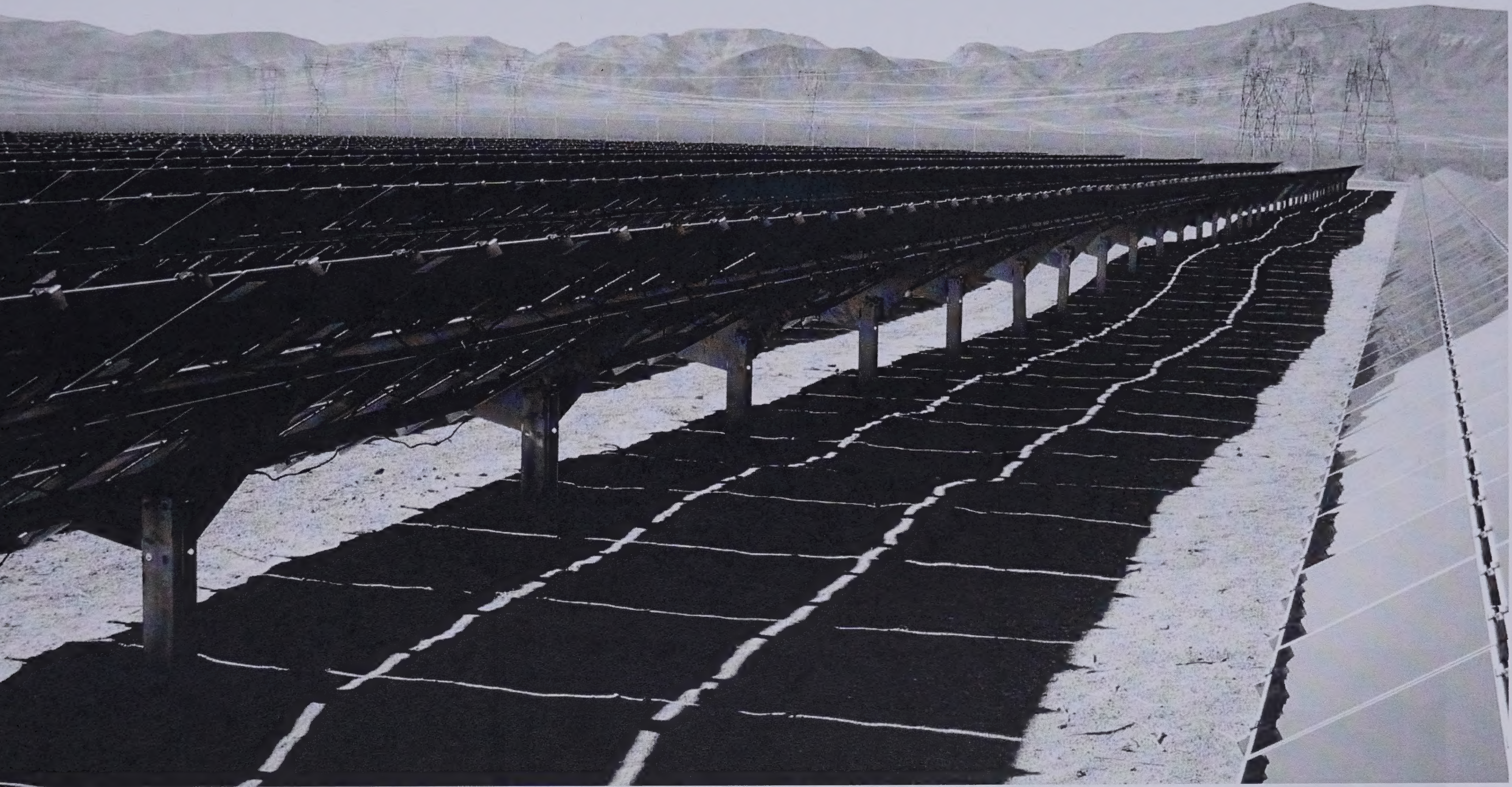

View of ground-mounted solar panel system structure

Chevron

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Chevron

Chevron Energy Solutions

A leading sustainable energy services company providing energy efficiency, renewable power and energy reliability projects

Major clients include federal and public sector institutions and Chevron facilities

Largest installer of solar photovoltaic (PV) systems for public institutions in California with over 25 megawatts of PV power installed on more than 25 projects

Installing solar shade structures since 2003

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Appendix F
Scoping Meeting Presentation

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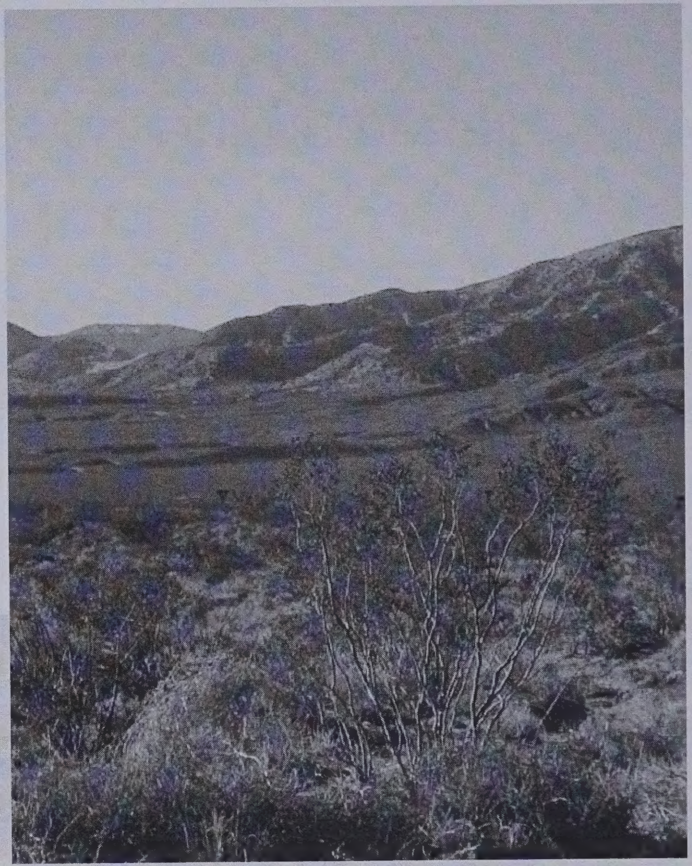
Agenda

- 6:30 – 7:00 p.m. **Open House**
- 7:00 – 7:20 p.m. **Presentation**
    - Welcome
    - Introductions
    - Project Overview
    - Meeting Purpose
    - Environmental Review Process
    - Other Opportunities for Public Comment
- 7:20 – 8:30 p.m. **Public Comment**
    - Closing Remarks



Who Are We?

- **Bureau of Land Management (BLM)**
  - **Roxie Trost,** Barstow Field Office Manager
  - **Greg Thomsen,** Program Manager, California Desert District Office
- **Chevron Energy Solutions**
  - **Ralph Hollenbacher,** Senior Manager - Technical Services, Large Scale Renewables
- **Ecology and Environment, Inc.**
  - **Dave Plumpton,** third party consultant on behalf of BLM

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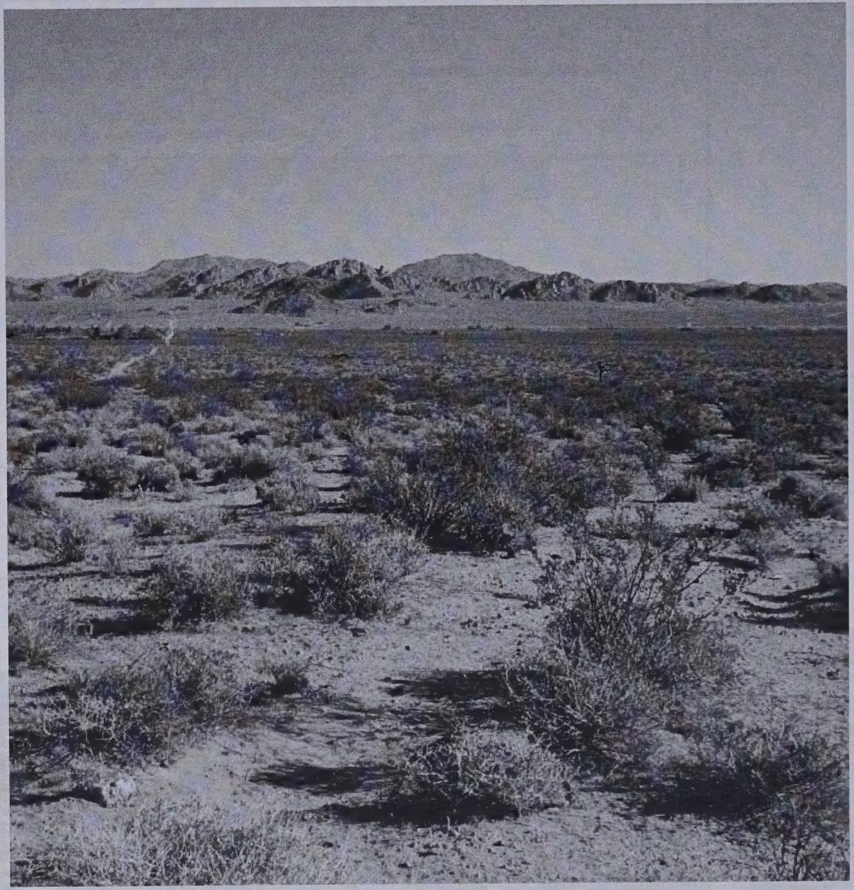
BUREAU OF LAND MANAGEMENT

Project Overview

Purpose and Need

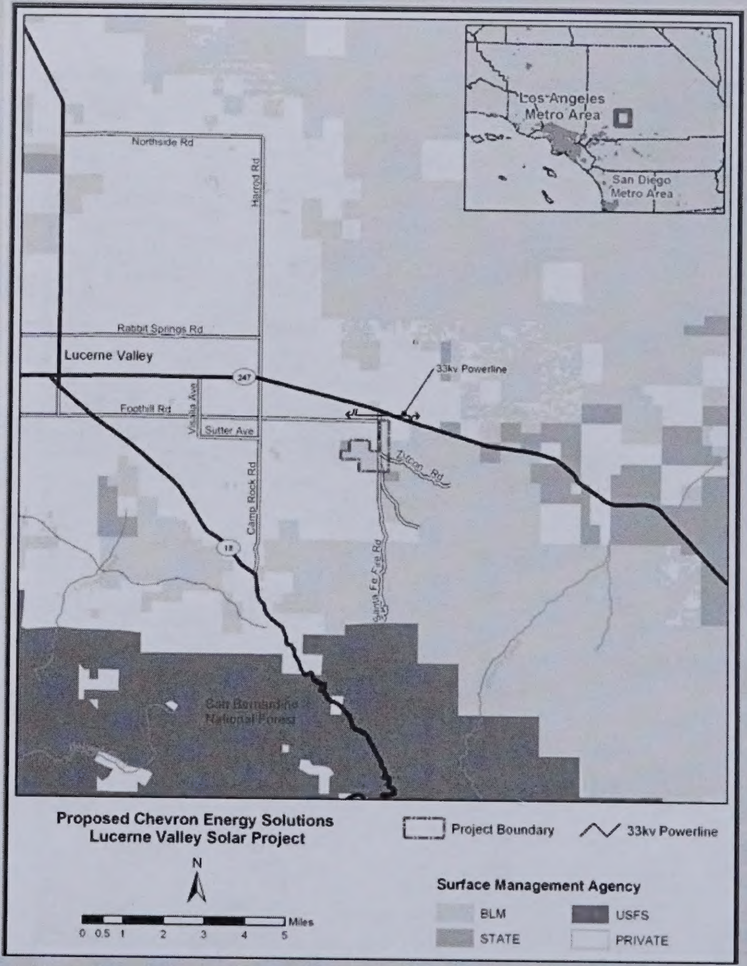
- Consider right-of-way (ROW) to construct project
- Consider California Desert Conservation Area Plan (CDCA Plan) Amendment
- Implement Energy Policy Act of 2005 and Secretarial Orders 3283
- Assist the State in meeting the Renewable Portfolio Standard



Project Overview

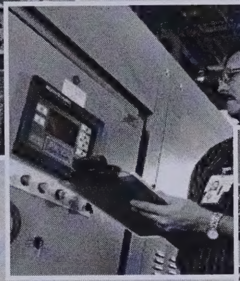
Project Location

- **516 acres, on BLM land**
- **8 miles southeast of Lucerne Valley**

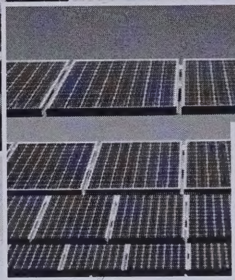


Chevron Energy Solutions: Efficiency, Reliability, Renewable Power

Lighting
& HVAC



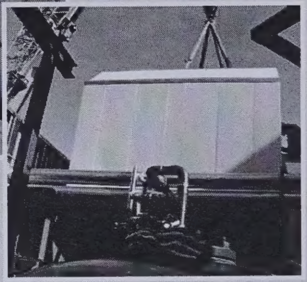
Energy
Controls



Solar

Fuel Cells

Biomass

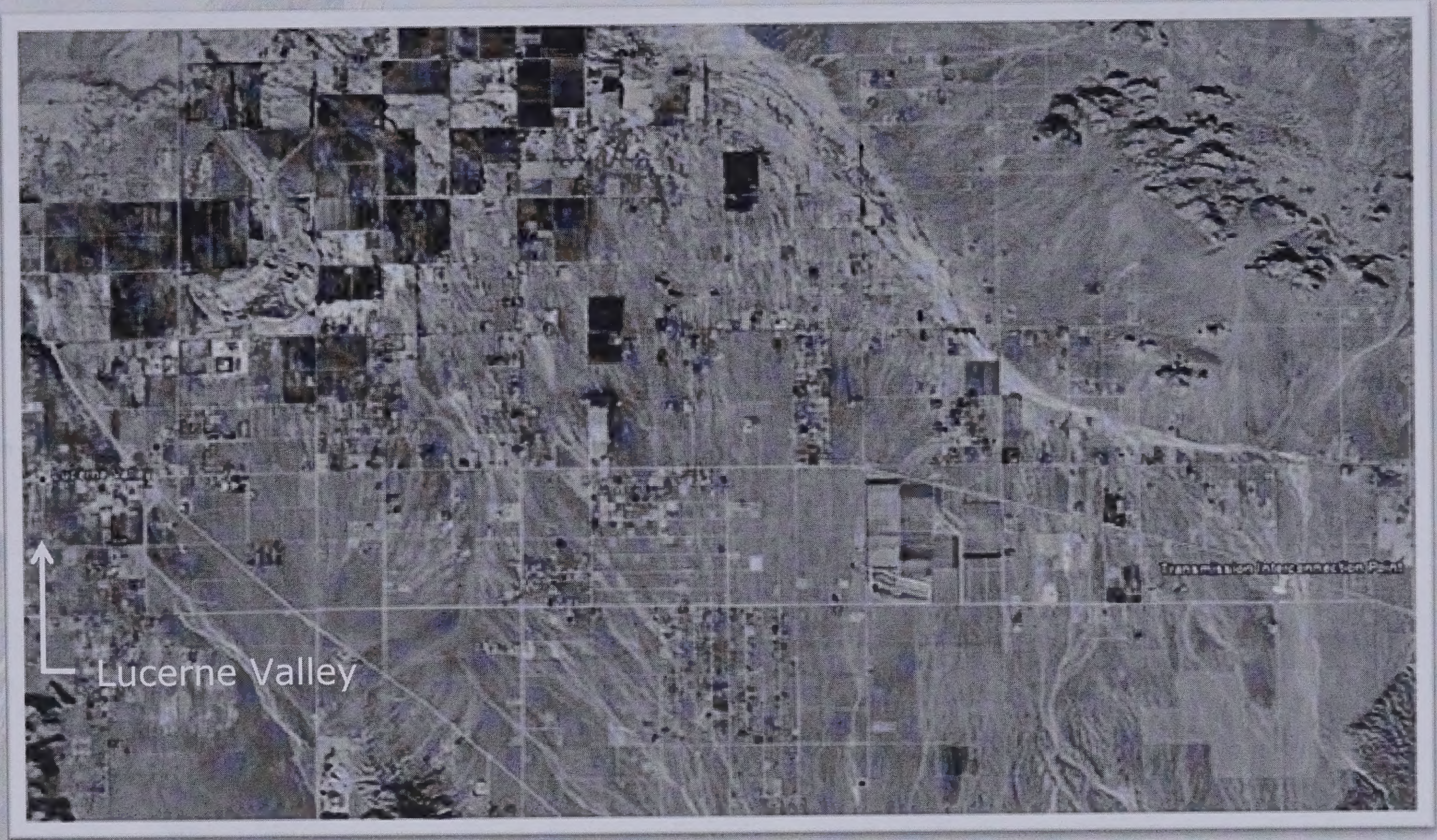


Cogeneration

Chevron Energy Solutions (CES)

- A leading sustainable energy services company providing energy efficiency, renewable power and energy reliability projects
  - 400 professionals
  - Two dozen locations across the U.S.
  - Major clients include: Federal and Public Sector Institutions and Chevron Facilities
- Largest installer of PV systems for public institutions in California with over 25 MW of PV installed.

Location of the Lucerne Valley Solar Project



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Project Statistics

- Phased, 45 MWe solar photovoltaic plant
  - 516 acres of BLM land
  - Interconnects with SCE 34.5 kV system
- 20 MWe First Phase
  - Start construction Q4 2010
  - $100 million project, $20 million local content
  - Peak construction workforce of 40 workers
  - Permanent work force of 2 workers
  - Estimated water use 10,000 gallons per year

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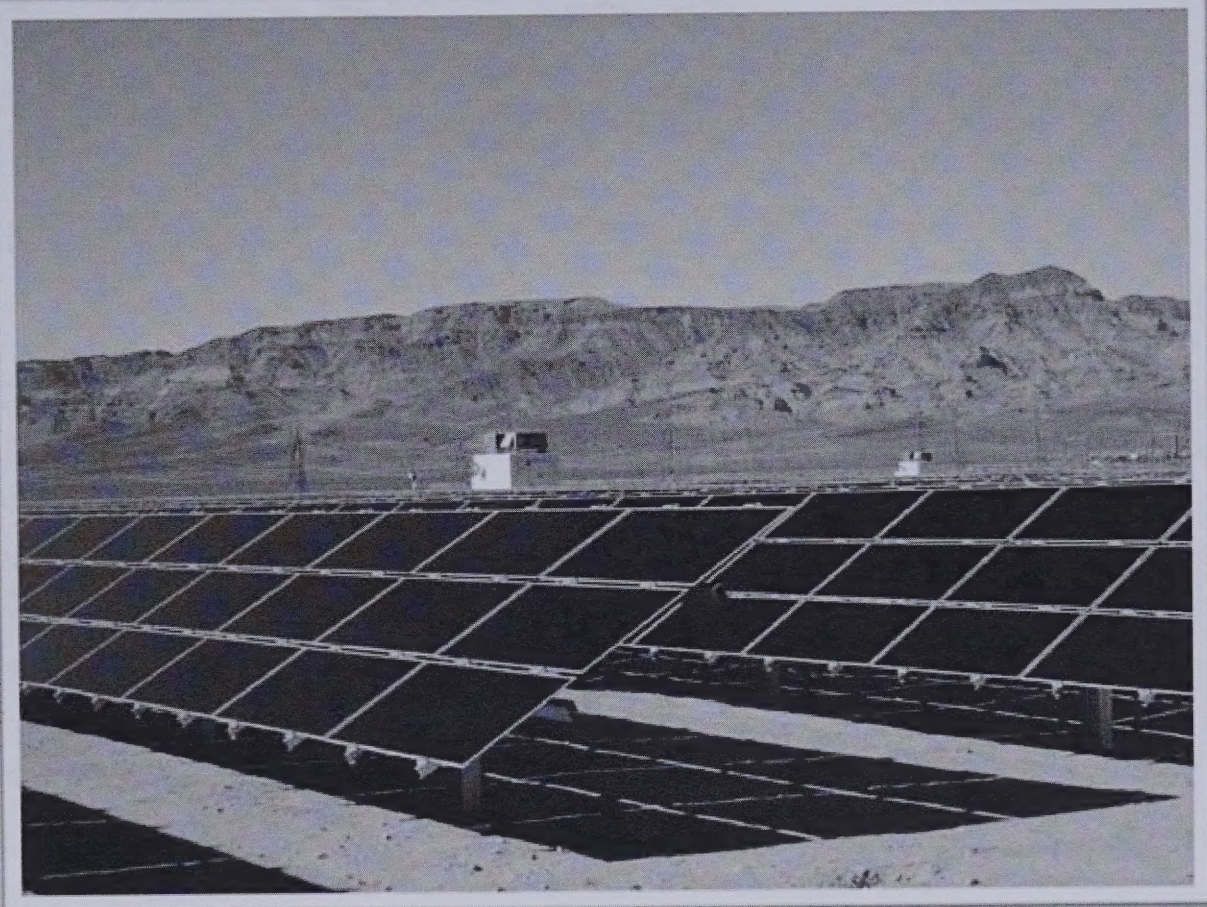
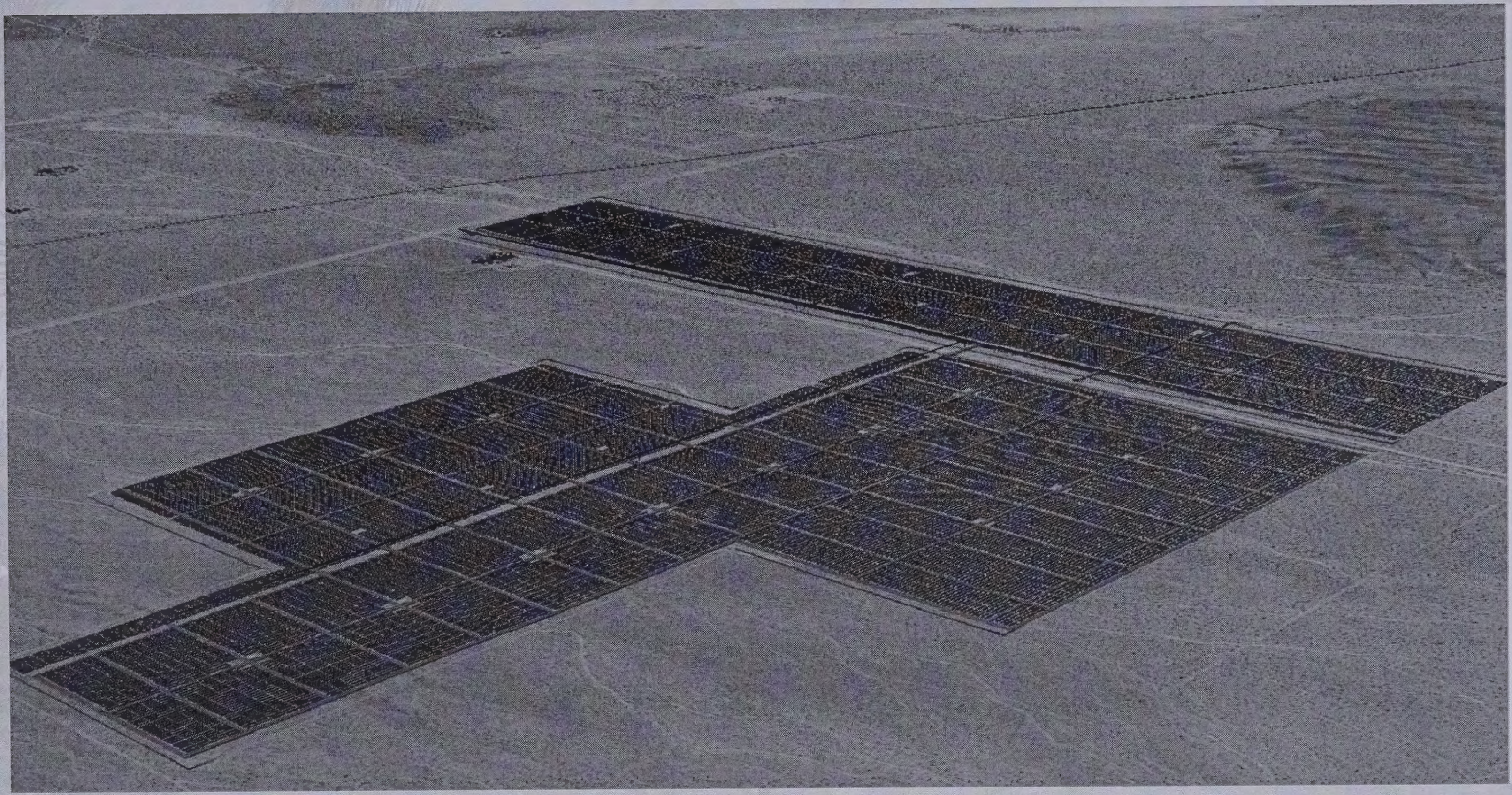
Thin film PV installation (Panels Facing South)



Another view of a thin film PV project

Visual Simulation of the project



Why Are We Here?

- BLM is preparing an Environmental Impact Statement (EIS)
- Present project overview
- Allow the public to provide BLM information and identify concerns
- Use this information to develop and analyze the project
- BLM will utilize and coordinate the NEPA commenting process to satisfy the public involvement process for Section 106 of the National Historic Preservation Act (NHPA)

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Environmental Review

- **The Bureau of Land Management (BLM) is the National Environmental Policy Act (NEPA) lead agency**

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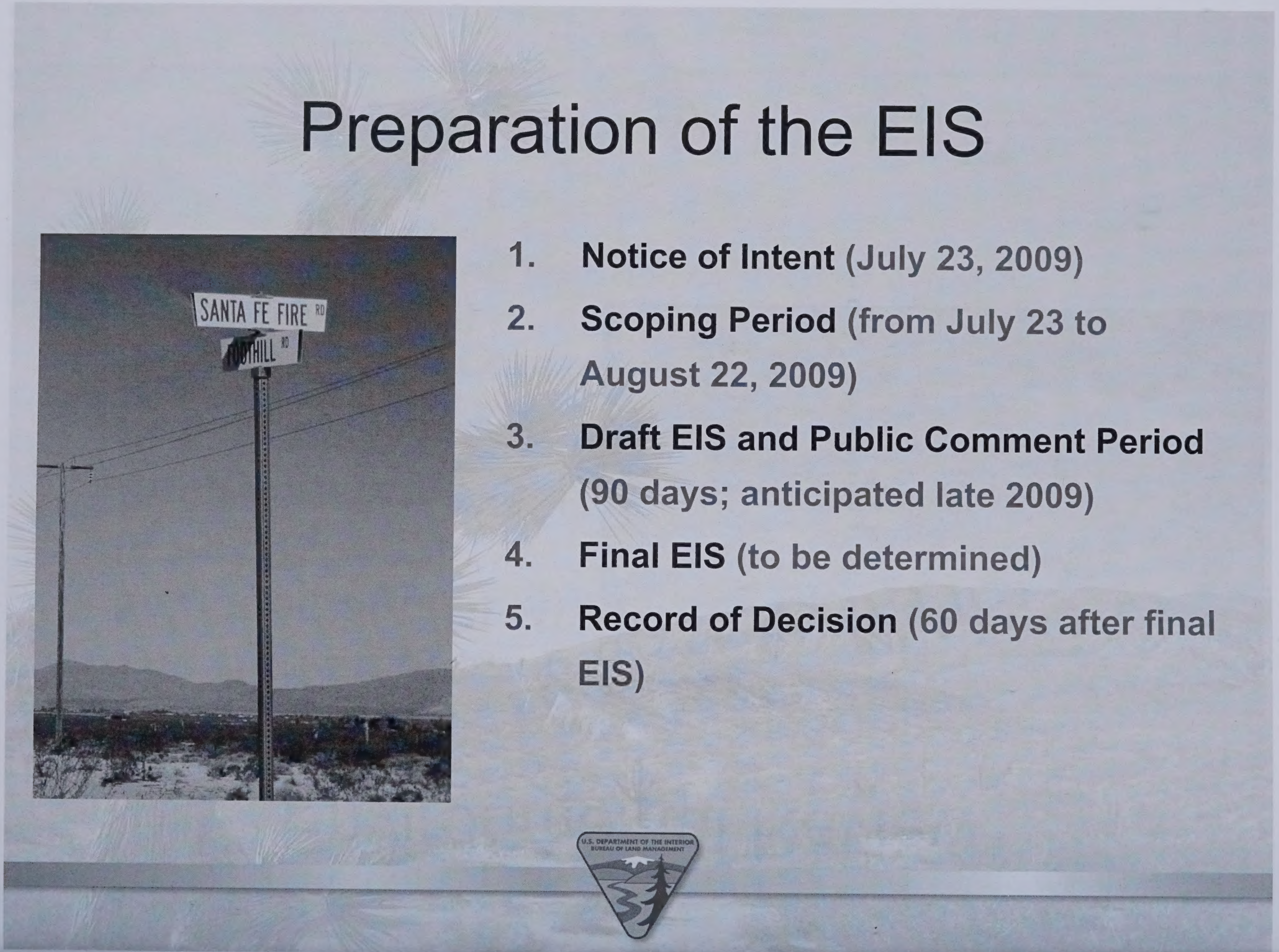

SANTA FE FIRE RD
FOOTHILL RD

Preparation of the EIS

1. **Notice of Intent** (July 23, 2009)
2. **Scoping Period** (from July 23 to August 22, 2009)
3. **Draft EIS and Public Comment Period** (90 days; anticipated late 2009)
4. **Final EIS** (to be determined)
5. **Record of Decision** (60 days after final EIS)

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NEPA Objectives

- **Allow the public to provide BLM with information and identify concerns**
- **Identify reasonable alternatives for analysis**
- **Analyze environmental impacts of proposed project and alternatives**
- **Identify ways to avoid or reduce environmental impacts**
- **Provide BLM with information so a decision can be made after the EIS is complete**

General Guidelines for the Comment Session

This session is to hear from you…

- **Please:**
  - Submit speaker cards in order to speak
  - Wait until your name is called
  - State your name and speak clearly
  - Limit your comments to 3 minutes; you may ask questions after all comments have been made
  - Use comment forms for more extensive input

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Where to Send Your Comments

- **Scoping comments will be accepted through**

  August 22, 2009

- **Send comments to:**

  BLM California Desert District Office
  attn: Greg Thomsen, Program Manager,
  22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553

  Submit by email to: LucerneSolar@blm.gov

Thank you!

Appendix G
Comments Received during Scoping Period

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Audubon California * California Wilderness Coalition * Defenders of Wildlife
Desert Protective Council * Mojave Desert Land Trust
Natural Resources Defense Council * Sierra Club * The Nature Conservancy
The Wilderness Society * The Wildlands Conservancy

Renewable Siting Criteria for California Desert Conservation Area

Environmental stakeholders have been asked by land management agencies, elected officials, other decision-makers, and renewable energy proponents to provide criteria for use in identifying potential renewable energy sites in the California Desert Conservation Area (CDCA). Large parts of the California desert ecosystem have survived despite pressures from mining, grazing, ORV, real estate development and military uses over the last century. Now, utility scale renewable energy development presents the challenge of new land consumptive activities on a potentially unprecedented scale. Without careful planning, the surviving desert ecosystems may be further fragmented, degraded and lost.

The criteria below primarily address the siting of solar energy projects and would need to be further refined to address factors that are specific to the siting of wind and geothermal facilities. While the criteria listed below are not ranked, they are intended to inform planning processes and were designed to provide ecosystem level protection to the CDCA (including public, private and military lands) by giving preference to disturbed lands, steering development away from lands with high environmental values, and avoiding the deserts' undeveloped cores. They were developed with input from field scientists, land managers, and conservation professionals and fall into two categories: 1) areas to prioritize for siting and 2) high conflict areas. The criteria are intended to guide solar development to areas with comparatively low potential for conflict and controversy in an effort to help California meet its ambitious renewable energy goals in a timely manner.

Areas to Prioritize for Siting

- Lands that have been mechanically disturbed, i.e., locations that are degraded and disturbed by mechanical disturbance:
  - Lands that have been "type-converted" from native vegetation through plowing, bulldozing or other mechanical impact often in support of agriculture or other land cover change activities (mining, clearance for development, heavy off-road vehicle use).[1]
- Public lands of comparatively low resource value located adjacent to degraded and impacted private lands on the fringes of the CDCA:[2]
  - Allow for the expansion of renewable energy development onto private lands.
  - Private lands development offers tax benefits to local government.
- Brownfields:
  - Revitalize idle or underutilized industrialized sites.
  - Existing transmission capacity and infrastructure are typically in place.
- Locations adjacent to urbanized areas:[3]
  - Provide jobs for local residents often in underserved communities;
  - Minimize growth-inducing impacts;

        - Provide homes and services for the workforce that will be required at new energy facilities;
        - Minimize workforce commute and associated greenhouse gas emissions.
    - Locations that minimize the need to build new roads.
    - Locations that could be served by existing substations.
    - Areas proximate to sources of municipal wastewater for use in cleaning.
    - Locations proximate to load centers.
    - Locations adjacent to federally designated corridors with existing major transmission lines.[4]

High Conflict Areas

In an effort to flag areas that will generate significant controversy the environmental community has developed the following list of criteria for areas to avoid in siting renewable projects. These criteria are fairly broad. They are intended to minimize resource conflicts and thereby help California meet its ambitious renewable goals. The criteria are not intended to serve as a substitute for project specific review. They do not include the categories of lands within the California desert that are off limits to all development by statute or policy.[5]

- Locations that support sensitive biological resources, including: federally designated and proposed critical habitat; significant[6] populations of federal or state threatened and endangered species,[7] significant populations of sensitive, rare and special status species,[8] and rare or unique plant communities.[9]
- Areas of Critical Environmental Concern, Wildlife Habitat Management Areas, proposed HCP and NCCP Conservation Reserves.[10]
- Lands purchased for conservation including those conveyed to the BLM.[11]
- Landscape-level biological linkage areas required for the continued functioning of biological and ecological processes.[12]
- Proposed Wilderness Areas, proposed National Monuments, and Citizens' Wilderness Inventory Areas.[13]
- Wetlands and riparian areas, including the upland habitat and groundwater resources required to protect the integrity of seeps, springs, streams or wetlands.[14]
- National Historic Register eligible sites and other known cultural resources.
- Locations directly adjacent to National or State Park units.[15]

EXPLANATIONS

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[1] Some of these lands may be currently abandoned from those prior activities, allowing some natural vegetation to be sparsely re-established. However, because the desert is slow to heal, these lands do not support the high level of ecological functioning that undisturbed natural lands do.

[2] Based on currently available data.

[3] Urbanized areas include desert communities that welcome local industrial development but do not include communities that are dependent on tourism for their economic survival.

[4] The term "federally designated corridors" does not include contingent corridors.

[5] Lands where development is prohibited by statute or policy include but are not limited to: National Park Service units; designated Wilderness Areas; Wilderness Study Areas; BLM National Conservation Areas; National Recreation Areas; National Monuments; private preserves and reserves; Inventoried Roadless Areas on USFS lands; National Historic and National Scenic Trails; National Wild, Scenic and Recreational Rivers; HCP and NCCP lands precluded from development; conservation mitigation

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banks under conservation easements approved by the state Department of Fish and Game, U.S. Fish and Wildlife Service or Army Corps of Engineers a; California State Wetlands; California State Parks; Department of Fish and Game Wildlife Areas and Ecological Reserves; National Historic Register sites.

[6] Determining "significance" requires consideration of factors that include population size and characteristics, linkage, and feasibility of mitigation.

[7] Some listed species have no designated critical habitat or occupy habitat outside of designated critical habitat. Locations with significant occurrences of federal or state threatened and endangered species should be avoided even if these locations are outside of designated critical habitat or conservation areas in order to minimize take and provide connectivity between critical habitat units.

[8] Significant populations/occurrences of sensitive, rare and special status species including CNPS list 1B and list 2 plants, and federal or state agency species of concern.

[9] Rare plant communities/assemblages include those defined by the California Native Plant Society's Rare Plant Communities Initiative and by federal, state and county agencies.

[10] ACECs include Desert Tortoise Desert Wildlife Management Areas (DWMAs). The CDCA Plan has designated specific Wildlife Habitat Management Areas (HMAs) to conserve habitat for species such as the Mohave ground squirrel and bighorn sheep. Some of these designated areas are subject to development caps which apply to renewable energy projects (as well as other activities).

[11] These lands include compensation lands purchased for mitigation by other parties and transferred to the BLM and compensation lands purchased directly by the BLM.

[12] Landscape-level linkages provide connectivity between species populations, wildlife movement corridors, ecological process corridors (e.g., sand movement corridors), and climate change adaptation corridors. They also provide connections between protected ecological reserves such as National Park units and Wilderness Areas. The long-term viability of existing populations within such reserves may be dependent upon habitat, populations or processes that extend outside of their boundaries. While it is possible to describe current wildlife movement corridors, the problem of forecasting the future locations of such corridors is confounded by the lack of certainty inherent in global climate change. Hence the need to maintain broad, landscape-level connections. To maintain ecological functions and natural history values inherent in parks, wilderness and other biological reserves, trans-boundary ecological processes must be identified and protected. Specific and cumulative impacts that may threaten vital corridors and trans-boundary processes should be avoided.

[13] Proposed Wilderness Areas: lands proposed by a member of Congress to be set aside to preserve wilderness values. The proposal must be: 1) introduced as legislation, or 2) announced by a member of Congress with publicly available maps. Proposed National Monuments: areas proposed by the President or a member of Congress to protect objects of historic or scientific interest. The proposal must be: 1) introduced as legislation or 2) announced by a member of Congress with publicly available maps. Citizens' Wilderness Inventory Areas: lands that have been inventoried by citizens groups, conservationists, and agencies and found to have defined "wilderness characteristics." The proposal has been publicly announced.

[14] The extent of upland habitat that needs to be protected is sensitive to site-specific resources. For example: the NECO Amendment to the CDCA Plan protects streams within a 5-mile radius of Townsend big-eared bat maternity roosts; aquatic and riparian species may be highly sensitive to changes in groundwater levels.

[15] Adjacent: lying contiguous, adjoining or within 2 miles of park or state boundaries. (Note: lands more than 2 miles from a park boundary should be evaluated for importance from a landscape-level linkage perspective, as further defined in footnote 12).

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"Meg Grossglass" <meg@orba.biz>

07/15/2009 06:32 PM

To <LucerneSolar@blm.gov>

cc

Subject Map - Lucerne Valley Solar Project

Hello,

Can you please send me a map of the project area?

Thank you!

Meg Grossglass
Media Relations and Land Use

ORBA - the Off-Road Business Association
951-926-1953 - office
951-415-1869 - Cell
661-323-1464 - Corporate Office

July 15, 2009

Email Title: Public Comment

I sincerely hope and pray that any licenses granted for solar electric projects contain iron-clad rules for site maintenance during the useful life of the project and site remediation and clean-up when the project reaches the end of its useful life.

I would hate to think that we have made mistakes that we have done and are still doing with mining facilities.Leaving a desert site filled with abandoned junk should be unthinkable. Lets not let the rush for renewable energy be the cause of destruction of our natural beauty
Edward Wood
frd750@gmail.com
12 S Bailey Loop Drive
Goldendale
WA 98620

July 16, 2009

Is there a map available on the location of the PV project? The BLM
site
links do not work well.

Dennis Morrison
Assistant Production Supervisor
Heavy Wheel Shop
Northrop Grumman
Fort Irwin, CA.
760-380-5432
dennis.w.morrison@us.army.mil

July 16, 2009

Can you provide maps that delineation the boundaries of the project and the list of legal descriptions for the parcels included in it?

Jim Porter
Public Land Management Specialist
California State Lands Commission
100 Howe Ave., Suite 100-South
Sacramento, CA 95825
Tel: (916) 574-1865
Fax: (916) 574-1925

July 17, 2009

Email Title: Cleaning Solar Panels?

Fox News did an investigation into the cost of upkeep and maintenance of the Solar Collection Panels that are used to collected the Suns Solar Energy.

In their report they stated that these Panels need to be Cleaned on a regular bases in order to operate effectively and that cleaning them Requires a Large Amounts of Water !

The High Desert is in a very bad drought. We can't afford to use Our scarce water to clean Your Solar Panels. There is an abundant of Wind flowing across the same area You want to install Your Solar Panels in. Why not install the "Wind Mill" type power converters ?

Steven Beavers
Barstow, Ca.
255-3814

July 17, 2009

Hello BLMers,

Would you pls send a copy of the map for the proposed Lucerne Valley Solar Project in San Bernardino County?

I understand that Chevron Energy Solutions has applied to the BLM for a right-of-way (ROW) on public lands to construct the solar photovoltaic power plant on approximately 516 acres about eight miles east of the community of Lucerne Valley.

Thanks very much.

Regards,
Joe Ross

Joseph V. Ross
MAGTFTC, MCAGCC G-4
Bldg. 1554 (HQ), Room 130
P.O. Box 788104
Twentynine Palms, CA. 92278-8104
Comm:760.830.7683 DSN:230.7683 Fax:760.830.5939
Email: joseph.ross@usmc.mil

July 20, 2009

To whom it may concern,

I work for a Substation packager (Power Substations, Inc.) and am interested in being added to the bidders list for the Lucerne Valley Solar Project. We have the means to provide our own contracting as well as work with any approved contractors you may already have in place. I understand that this project is in its early stages, but would like to request that we be added to the approved list and/or be sent the plans and specs as they become available. I greatly appreciate any assistance on this matter.

Sincerely,

Jordan T. Demmien
Project Manager/Designer
Power Substations, Inc.
8834 Mayfield Rd. Suite C
Chesterland, Ohio 44026
Phone: (440) 729-8300 x-109
Fax: (440) 729-8400
www.trivisinc.com
www.powersubs.com

July 21, 2009

I would like to offer up my companies services for bidding on the Lucerne Valley Solar Project.

Please contact me regarding the bidding process and how HelioPower can be involved.

Please check out our website for some of our recent commercial size installations. www.heliopower.com

thank you,

Matt McPherson
Energy Consultant
Office: 760-272-0131
Cell: 310-938-0949
Fax: 951-677-9559
http://www.heliopower.com

July 22, 2009

Can you send me a map of the proposed solar project site? I want to attend a scoping meeting, but I need to know where, exactly, "eight miles east of the town of Lucerne Valley" this thing is to be built.

Thanks,
Gary Hatfield

July 22, 2009

Hello,

My name is Dale Marriott and I am the President of Fencecorp Inc. We are a fence company specializing in commercial fencing. We have fenced several solar plants and would definitely be interested in providing fencing for this project. Can you please provide me with any information available as far as contacts so that I might be able to get in touch with the appropriate people.

Thank You,

FenceCorp Inc.
882 main street
Riverside, Ca 92501

Dale Marriott
Ph# 951-686-3170
Fax# 951-788-7759
Cell# 951-830-6200
Email: d.marriott@fencecorp.us
Web: www.fencecorp.us

"Pugliese, Jim (JAPU)" <japu@chevron.com>

07/23/2009 09:00 AM

To <LucerneSolar@blm.gov>

cc

Subject distribution list for CES proposed project in Lucerne valley

Kindly include me in your email distribution list for Chevron Energy Solutions proposed project in Lucerne Valley

July 25, 2009

Email Title: Scoping Comments on Proposed 45 MW Lucerne Solar Project

To whom it may concern:

My name is Brendan Hughes and I would like to comment on the proposed 45 MW Lucerne Solar Project. This thin-film photovoltaic project would require more than 500 acres of land that would be completely graded and recontoured. I believe that it is unnecessary for this project to be located on undeveloped BLM land. The Lucerne Valley area has thousands of acres of abandoned farmland that are already disturbed and degraded. Chevron should use some of this private land to build its project. Much of this abandoned farmland is already serviced by utility lines. Also, Chevron should consider installing these 45 MW of solar panels onto the rooftops of homes and businesses in the greater Victorville area. Both of these options would fit the ultimate purpose and need of the project. The need is for renewable power for the uses of people. The purpose of the project is to provide that power. Therefore both of these options should be presented and considered as reasonable alternatives to the proposed action. Indeed, BLM should determine one of these to be the preferred alternative to the action.

Aside from the issues above, the Draft EIS should consider impacts to wildlife, including the desert tortoise, along with the impacts to the scenic visual landscape between Lucerne Valley and Yucca Valley, including the Johnson Valley OHV area. Also, the greenhouse gases produced by building a solar project at a remote site, as opposed to rooftop solar or closer to population centers, should be considered in the analysis of the project.

Thank you for your consideration.

Brendan Hughes
61093 Prescott Trail
Joshua Tree, CA 92252
jesusthedude@hotmail.com

July 26, 2009

Please reply. I need a map of the site location. Or, please tell me where to find one. I need this information before the scoping meeting.

Thanks,
Gary Hatfield

July 27, 2009

Fidelity Investments International
Oakhill house,130 Tonbridge,
Hildenborough.
Kent TN119DZ,
United Kingdom.
I know that this might come to you as a suprise as we do not know each other before. I am Mr Tim McCarron, the fund manager of Fidelity Investments International, UK. I will need your assistance in investing some money in your country. If you are interested and you want to partner with me, kindly get back to me for more details.Reply to me via email.

Sincerely Yours.
Tim McCarron
Fund Manager,
Fidelity Investments International,
London, UK.

July 28, 2009

Lynnette,

I would like to officially request that I be put on the public notification list for this project. I understand that a press release went out stating that the July 29 scoping meeting has been re-located. Is the meeting on the 30th still in the same location?

Thanks

Meg Grossglass
Media Relations and Land Use

ORBA - the Off-Road Business Association
951-926-1953 - office
951-415-1869 - Cell
661-323-1464 - Corporate Office

Gary Hatfield <mtnhomehat@yahoo.com>
07/28/2009 01:58 PM
To Lucernesolar@blm.gov
cc
Subject

sorry, I got the map
Thanks, Gary

Gary Hatfield <mtnhomehat@yahoo.com>
07/28/2009 01:46 PM
To Lucernesolar@blm.gov
cc
Subject Map download

Map not downloading, . . . or it takes forever. I have super-fast FIOS. Shouldn't take this long (15 min already).
Please advise.
Gary

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Bureau of Land Management

Public Scoping Meeting

Lucerne Valley Solar Project EIS

Lucerne Valley, CA

July 29, 2009

RECEIVED
BUREAU OF LAND MGMT
09 AUG 21 PM 12:26
CALIF. DESERT DISTRICT
MORENO VALLEY, CA

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety

COMMENTS

Thank you for participating in tonight's Public Scoping Meeting on the Lucerne Valley Solar Project EIS

Your comments on the scope and focus of the environmental review are encouraged.

Name (please print legibly): Charlene Claybaugh

Affiliation (if applicable): Johnson Valley Improvement Association

Phone: Email: Charlene@TheClaybaughgroup.net

Mailing Address: 51720 Hacienda Rd#45

City, State, Zip: Johnson Valley CA 92285

COMMENTS:

What issues should be addressed in this environmental document?

The impact of water, Construction, Maintenance, Visual impact, Traffic, Real Estate Values,

Alternative. Solar power/wind power installed on our Homes.

Before Aug 22, 2009 ~~**Turn in Comments during this meeting or**~~

Send comments to: BLM California Desert District Office, attn: Greg Thomsen, Program Manager, 22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553 or by e-mail at LucerneSolar@blm.gov

Bureau of Land Management
Public Scoping Meeting
Lucerne Valley Solar Project EIS
Lucerne Valley, CA
July 29, 2009

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COMMENTS

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Name (please print legibly): Juanita Crouse
Affiliation (if applicable):
Phone: 760-364-4281 Email:
Mailing Address: 48378 Firethorn
City, State, Zip: Johnson Valley, CA. 92285

COMMENTS:
What issues should be addressed in this environmental document?

devalue property

Eye sore

No end to putting up "many" –

Before Aug 22, 2009 ~~Turn in Comments during this meeting or~~
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COMMENTS

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Your comments on the scope and focus of the environmental review are encouraged.

Name (please print legibly): M Diane Hunnicutt
Affiliation (if applicable):
Phone: 760 364-2535 Email:
Mailing Address: 4776 Greene Road
City, State, Zip: Johnson Valley, Ca 92285

COMMENTS:
What issues should be addressed in this environmental document?

eye sore
uses to much water
Propety values will go down
last desert for desert toys we
have lots of roads we have
used for 50 years why take
it away from us.

Notice all cactus's from wind farm
in Palm Springs area have
been removed.

Before Aug 22, 2009 ~~Turn in Comments during this meeting or~~
Send comments to: BLM California Desert District Office, attn: Greg Thomsen, Program Manager,
22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553 or by e-mail at LucerneSolar@blm.gov

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COMMENTS

Thank you for participating in tonight's Public Scoping Meeting on the Lucerne Valley Solar Project EIS

Your comments on the scope and focus of the environmental review are encouraged.

Name (please print legibly): Dawn Tonioli

Affiliation (if applicable):

Phone: 760 364-4587 Email:

Mailing Address: Po Box 3896

City, State, Zip: LAnders - Calif 92285

COMMENTS:
What issues should be addressed in this environmental document?

devaluation of property values

additional use of water for maitenance

Before Aug 22, 2009 ~~Turn in Comments during this meeting or~~

Send comments to: BLM California Desert District Office, attn: Greg Thomsen, Program Manager, 22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553 or by e-mail at LucerneSolar@blm.gov

August 1, 2009

name = Ramona Doles

organization = Homeowners of Newberry Springs

email = mommom97@yahoo.com

subject = plan for solar plant in the middle of homes

FeedbackType = General Question

request_comment = We are gathering information to fight this plan and one of our questions is regarding the round tail squirel is on the endangered species list.
<br>
<br>We would like to know if you require an environmental study on this type of plan?

username123 =

sentinal = Sentinal

page_referred_from = http://www.blm.gov/ca/st/en/fo/barstow.html

fo = 4

Submit = Send Request

August 1, 2009
Email Title: Project

I attended the presentation at Lucerne Valley in late July. There seemed to be a few people (not of the community) who had concerns about aspects of the project. I found some to be laughable. For example, one person brought up earthquake seizmic reports. For goodness sakes, the solar panels are only 6 feet high. If they should fall over in an earthquake no one would be hurt, the only damage would be to the cells themselves.

Another was concerned about road grading, and or paving. The county currently grades our roads around once every 6 weeks. I'm sure he would complain if the county didn't grade his road.

There was mentioned a concern about wild mountain sheep. I have lived here continuously for the last 28 years and have never seen a sheep. Besides the project is not in the mountains.

We have been way to long depending on foreign oil for our energy. It is time to utilize all alternative energy, solar, wind, bio diesel, and anything else that comes along

I support the project 100 percent.

Larry Mayer

LUCERNE VALLEY ECONOMIC DEVELOPMENT ASSOCIATION (LVEDA)

To: Greg Thomsen – BLM (LucerneSolar@BLM.gov)
Ralph Hollenbacher – Chevron (Rhollenbacher@chevron.com)

Re: Scoping - Chevron Energy Solutions – Lucerne Valley Solar Project.

From: Chuck Bell, Sec.
P. O. Box 193
Lucerne Valley, CA 92356 760 964 3118

Date: 8/3/09

LVEDA's Mission Statement:
Provide a forum for discussion and action on important community issues – promote infrastructure improvements – work with County and developers to promote development that is both "economic" and compatible with our rural lifestyle, environment and resource availability.

Appreciate the scoping session - hopefully productive for BLM and Chevron. Although this PV project is a relatively small "utility scale" proposal – and adjacent to a transmission line that can apparently accommodate the voltage - we will not take a position until the environmental process is complete.

GENERAL COMMENTS:

In order not to get the "cart before the horse" - this project should be assessed via BLM's Programmatic process which will identify the limited areas available and suitable for solar plants - quantifying the amount of acreage/sq. miles and alignments dedicated to all the land-uses that we already provide s. Calif. - to fully understand why we need a "Solar Energy Siting Element" to our current BLM and County Plans

Lucerne Valley could well be surrounded by the following projects: LADWP's GPN transmission line – Granite Mt. Wind – Fry Mt. Wind – the proposed Cannon Solar PV – SCE's solar PV – Chevron's project - etc. etc.

Granted, we have wind and sun which should be shared with our countrymen. But we also have the Mojave Desert which is a treasure unto itself - which cannot be consumed for the benefit of the urban coastal basin. Lucerne Valley provides that megalopolis with limestone, cement, aggregate (with its incessant truck traffic and no sales tax revenue for us since these raw materials are "wholesale" – providing sales tax only for other jurisdictions when converted to final products), recreation (particularly the resource-consumptive and largest OHV open areas in the nation), power line/pipeline corridors, tremendous amounts of acreage designated for expanding military bases, public open space, immense areas set-aside for habitat protection, etc. etc.

As alternatives to large-scale renewable facilities on public land, this project's analysis should include a quantitative assessment of the megawatts of solar power that could potentially be generated within the urban areas of demand (ie: roof top and parking lot systems) prior to any further commitment of public land resources to subsidize urban areas.

Use of BLM land should not displace private sector opportunities – with the cheaper use of gov. land competing w/solar plant options on private land (ie: tremendous amounts of fallowed agricultural and disturbed parcels in s. Cal. counties that cannot otherwise be developed due to water and other restrictions) - allowing landowners to make the best use of their properties – in turn providing local jurisdictions with more property tax revenue.

We also have to deal with the dilemma; "where and how do we mitigate the impacts of all these proposed projects?"

Utilities, PUC and the renewable industry need to devise means to reward communities that will bear the burden of all these solar/wind plants – and in turn provide incentives for acceptance (ie reduced elec. rates, etc). Minimal local employment, minor amounts of property taxes and the occasional donation to some community organization do not provide adequate compensation. Even a program ensuring the County receives any sales tax revenue does not substantially benefit the affected community.

SPECIFIC COMMENTS

The EIS needs to assess and mitigate the following:

If even two of these proposed projects start construction at the same time – related traffic through town will become a major impact that must be mitigated.

De-brushing/grading will create a long-term dust source, adversely affecting the facility and down-wind receptors. Minimal grading, vegetation mowing and placement of decomposed granite or small gravel will help to stabilize the site and reduce weed infestations – as well as enhancing native re-vegetation if and when facilities are removed.

Santa Fe Fire Rd. should be paved or at least graveled – benefit to local residents and eliminating a dust source.

A right-turn lane on Hwy 247 would provide safer egress in this area of high-speed traffic – especially for the construction phase.

Project's effect on surrounding private land values.

Include the total project's phases in the analysis – not just Phase 1.

The cost/benefit of power produced vs. from all other sources.

The existing transmission line's available capacity – ultimate requirement for upgrading.

Net transmission loss through said line.

Impact on Mojave Water Agency's Morongo Pipeline.

Effect on a possible future "historic/scenic" designation for Hwy 247 (Old Woman Springs Rd.)

Bonding requirements for site reclamation/restoration.

Cumulative impacts (environmental, socio-economic, traffic, visual, etc.) from this and all other proposed projects proposed for the Lucerne Valley/Johnson Valley region – (ie: LADWP's GPN transmission line, Granite Mt. Wind, Fry Mt. Wind, Edison Solar, Cannon Solar, 29 Palms Marine Base expansion, etc.).

August 3, 2009

TO: BLM California Desert District Office
Attn: Greg Thomsen, Program Manager

FROM: Dennis Pond
P.O. Box 1628
Lucerne Valley, CA 92356
Email at: dennispond@gmail.com

The proposed Lucerne Valley Solar Project is probably the best possible system to produce electricity with the least intrusion into the lives of local residents. I have the following questions and concerns about the Lucerne Valley Solar Project proposed by Chevron:

1. What will be done to mitigate the effects of blowing dust and sand when the project site has been disturbed?
2. What protections will be provided against flash-flooding? Thunderstorms are frequent enough in the mountains to the south as well as in the project area itself to assume this will be an issue during the life of the project.
3. How big an issue is geologic stability? The epicenter for the Landers Earthquake is only about 30 miles east of the site.
4. The proposed project is anticipating use of 10,000 gallons of water annually. This doesn't seem realistic to local residents. Where will the water come from?
5. Those of us who have built on private property have had to consider wildlife habitat in our construction. What will be done to protect the desert tortoise, big horn sheep, cougars, desert fox and coyotes? Because the project site is BLM land, and the federal government has a vested interest in its construction, will these concerns be considered, or swept under some rug?
6. There are rumors of multiple energy-producing projects in this area, sponsored and constructed by various private and government agencies. There doesn't seem to be a great deal of concern for the cumulative effects these projects are apt to have on the quality of life for residents living in Lucerne Valley now. Unsightly wind turbines on every ridge, and transmission lines crisscrossing the valley at multiple angles are not aesthetic additions to the natural scenery.
7. Will there be any economic benefit for the residents of Lucerne Valley? Will there be employment opportunities?

The suspicion among residents is that the Department of Energy, through the Bureau of Land Management, is ramming this and other projects slated for Lucerne Valley down our throats. It might be a little more tolerable if there were also new oil drilling rigs going up in the Santa Barbara Channel. To listen to some folks, that channel is sacred territory. To those folks and others, the Mojave Desert is so many million square miles of kitty litter, to be used and abused at the whim of politicians at the federal and state levels of government. Do you get the idea some local residents don't trust the system? If so, good!

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August 3, 2009

Please add me to the Project Mailing List. When available, please send me an electronic copy of the Draft EIS. Thanks.

Sandra Fairchild
Senior Project Manager

EPG, Inc.
2950 Sunridge Heights Parkway, Ste. 130
Henderson, Nevada 89052

(702) 263-6553 Office
(702) 263-3234 Fax
(602) 810-2765 Mobile
http:/www.epgaz.com

August 3, 2009
Email Title: Chevron Energy Solutions
From: Claudia Sall

greg

i attended the scoping meeting for the chevron energy solution's project in lucerne valley last week. i would like to continue following this project as well as others in the johnson valley. i was disappointed that the agenda did not include a spot for q&a sesssion. questions were relegated to being casually posed before and after the presentation, and hence did not make it into the record. perhaps a spot should be included before the comment period which would make the comment period more effective. maybe in the past the q&a session has not had a spot on the agenda, but the recent planning and scoping meetings i have attended have not included question and answers on the record.

i have some questions about the chevron that i need answered:

- what is the nature of the cdca amendment?
- what is the present load on the 33kv line?
- since the combined phases will need 45,000 kv of transmission capacity, how will that upgrade be addressed. i heard a lot of probables, but as these projects are not planned in a vacuum, there must be a plan of how this will be accomplished, i.e. if there is a request into sce for upgrading this line, does that mean just re-stringing?
- does the ROW application include transmission upgrade?
- how is the water being provided? does the row include well-drilling? if so, will these wells be metered?

are these projects being processed out of moreno valley rather than barstow? please advise me who are the project managers and what are their email addresses?

there are two applications for wind projects in the pioneertown area, CACA 48629 & CACA 48689. i am interested in knowing what is happening with these projects and would also like to be on the contact list for those projects and would like to know the office that is processing them and their project managers' names & email addresses.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

AUG 0 4 2009

Attn: Mr. Greg Thomsen
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311

Subject: Notice of Intent to Prepare an Environmental Impact Statement and Amendment to the California Desert Conservation Area Plan for the Lucerne Valley Solar Project, San Bernardino County, CA.

Dear Mr. Thomsen:

The U.S. Environmental Protection Agency (EPA) has reviewed the July 23, 2009 Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) and Amendment to the California Desert Conservation Area Plan for the Lucerne Valley Solar Project in San Bernardino County, CA. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

EPA supports increasing the development of renewable energy resources, as recommended in the National Energy Policy Act of 2005. Using renewable energy resources such as solar power can help the nation meet its energy requirements without generating greenhouse gas emissions. To assist in the scoping process for this project, we have identified several issues for your attention in the preparation of the EIS. We are most concerned about the following issues: impacts to biological resources, habitat, and water resources, as well as the cumulative effects associated with the development of multiple large-scale solar projects.

We appreciate the opportunity to review this NOI and are available to discuss our comments. Please send one hard copy of the Draft EIS and two CD ROM copies to this office at the same time it is officially filed with our Washington D.C. Office. If you have any questions, please contact me at (415) 972-3545 or at mcpherson.ann@epa.gov.

Sincerely,

Ann McPherson
Environmental Review Office

Enclosures: EPA's Detailed Comments

US EPA DETAILED COMMENTS ON THE SCOPING NOTICE FOR THE PROPOSED LUCERNE VALLEY SOLAR PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA, AUGUST 4, 2009

Project Description

Chevron Energy Solutions has requested a right-of-way authorization to construct and operate a 45 megawatt (MW) solar photovoltaic (PV) energy generation facility in San Bernardino County, California. The proposed project would be located on 516 acres of public lands and would be constructed in two phases. Phase 1 would consist of up to 180,000 thin-film PV panels with a generating capacity of 20 MW; Phase II would be similarly configured with a generating capacity of 25 MW. The facility would connect to the existing Southern California Edison 33 kilovolt (kV) distribution system adjacent to the proposed site and include a new switchyard, control/maintenance building, and parking area.

Statement of Purpose and Need

The Draft Environmental Impact Statement (DEIS) should clearly identify the underlying purpose and need to which the Bureau of Land Management (BLM) is responding in proposing the alternatives (40 CFR 1502.13). The *purpose* of the proposed action is typically the specific objectives of the activity, while the *need* for the proposed action may be to eliminate a broader underlying problem or take advantage of an opportunity.

Recommendation:
The purpose and need should be a clear, objective statement of the rationale for the proposed project. The DEIS should discuss the proposed project in the context of the larger energy market that this project would serve; identify potential purchasers of the power produced; and discuss how the project will assist the state in meeting its renewable energy portfolio standards and goals.

Alternatives Analysis

The National Environmental Policy Act (NEPA) requires evaluation of reasonable alternatives, including those that may not be within the jurisdiction of the lead agency (40 CFR Section 1502.14(c)). A robust range of alternatives will include options for avoiding significant environmental impacts. The DEIS should provide a clear discussion of the reasons for the elimination of alternatives which are not evaluated in detail. Reasonable alternatives should include, but are not necessarily limited to, alternative sites, capacities, and technologies as well as alternatives that identify environmentally sensitive areas or areas with potential use conflicts. The alternatives analysis should describe the approach used to identify environmentally sensitive areas and describe the process that was used to designate them in terms of sensitivity (low, medium, and high).

The environmental impacts of the proposal and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public (40 CFR 1502.14). The potential environmental impacts of each alternative should be quantified to the greatest extent possible (e.g., acres of wetlands impacted, tons per year of emissions produced, etc.).

Recommendations:
The DEIS should describe how each alternative was developed, how it addresses each project objective, and how it will be implemented. The alternatives analysis should include a discussion of alternative sites, capacities, and generating technologies, including different types of solar technologies, and describe the benefits associated with the proposed technology.

The DEIS should describe the current condition of the land selected for the proposed project, discuss whether the land is classified as disturbed, and describe to what extent the land could be used for other purposes.

The DEIS should clearly describe the rationale used to determine whether impacts of an alternative are significant or not. Thresholds of significance should be determined by considering the context and intensity of an action and its effects (40 CFR 1508.27).

The DEIS should expand the alternatives analysis to include consideration of residential and wholesale distributed generation as an alternative. For example, consider an alternative that includes the installation of PV panels in residential and commercial areas near urban load sources.

Water Resources

Water Supply and Water Quality

We understand that PV installations need much less water than solar thermal plants that use water for cooling. We are unclear, however, whether thin-film PV plants use more or less water than traditional PV plants. The DEIS should estimate the quantity of water the project will require and describe the source of this water and potential effects on other water users and natural resources in the project's area of influence. The DEIS should clearly depict reasonably foreseeable direct, indirect, and cumulative impacts to this resource. Specifically, the potentially-affected groundwater basin should be identified and any potential for subsidence and impacts to springs or other open water bodies and biologic resources should be analyzed. The DEIS should include:

- A discussion of the amount of water needed for the proposed solar PV generation facility and where this water will be obtained;
- A discussion of availability of groundwater within the basin and annual recharge rates;

- A description of the water right permitting process and the status of water rights within that basin, including an analysis of whether water rights have been over-allocated;
- A discussion of cumulative impacts to groundwater supply within the hydrographic basin, including impacts from other large-scale solar installations that have also been proposed;
- An analysis of different types of technology that can be used to minimize or recycle water;
- A discussion of whether it would be feasible to use other sources of water, including potable water, wastewater or deep-aquifer water; and
- An analysis of the potential for alternatives to cause adverse aquatic impacts such as impacts to water quality and aquatic habitats.

The DEIS should address the potential effects of project discharges, if any, on surface water quality. Specific discharges should be identified and potential effects of discharges on designated beneficial uses of affected waters should be analyzed. If the facility is a zero discharge facility, the DEIS should disclose the amount of process water that would be disposed of onsite and explain methods of onsite containment.

EPA strongly encourages the BLM to include in the DEIS a description of all water conservation measures that will be implemented to reduce water demands. Project designs should maximize conservation measures such as appropriate use or recycled water for landscaping and industry, xeric landscaping, a water pricing structure that accurately reflects the economic and environmental costs of water use, and water conservation education. Water saving strategies can be found in the EPA's publications *Protecting Water Resources with Smart Growth* at www.epa.gov/piedpage/pdf/waterresources_with_sg.pdf, and *USEPA Water Conservation Guidelines* at www.epa.gov/watersense/docs/app_a508.pdf.

In addition, the DEIS should describe water reliability for the proposed project and clarify how existing and/or proposed sources may be affected by climate change. At a minimum, EPA expects a qualitative discussion of impacts to water supply and the adaptability of the project to these changes.

Clean Water Act Section 404

The project applicant should coordinate with the U.S. Army Corps of Engineers (Corps) to determine if the proposed project requires a Section 404 permit under the Clean Water Act. Section 404 regulates the discharge of dredged or fill material into waters of the United States (WOUS), including wetlands and other *special aquatic sites*. The DEIS should describe all WOUS that could be affected by the project alternatives, and include maps that clearly identify all waters within the project area. The discussion should include acreages and channel lengths, habitat types, values, and functions of these waters. In addition, EPA suggests that the BLM include a jurisdictional delineation for all WOUS, including ephemeral drainages, in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* and the December 2006 *Arid West Region Interim Regional Supplement to the Corps of Engineers Wetland Delineation*

Manual: Arid West Region. A jurisdictional delineation will confirm the presence of WOUS in the project area and help determine impact avoidance or if state and federal permits would be required for activities that affect WOUS.

If a permit is required, EPA will review the project for compliance with *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA ("404(b)(1) Guidelines"). Pursuant to 40 CFR 230, any permitted discharge into WOUS must be the least environmentally damaging practicable alternative (LEDPA) available to achieve the project purpose. The DEIS should include an evaluation of the project alternatives in this context in order to demonstrate the project's compliance with the 404(b)(1) Guidelines. If, under the proposed project, dredged or fill material would be discharged into WOUS, the DEIS should discuss alternatives to avoid those discharges.

The DEIS should describe the original (natural) drainage patterns in the project locale, as well as the drainage patterns of the area during project operations, and identify whether any components of the proposed project are within a 50 or 100-year floodplain. We also recommend the DEIS include information on the functions and locations of WOUS, as well as ephemeral washes in the project area, because of the important hydrologic and biogeochemical role these washes play in direct relationship to higher-order waters downstream.

Clean Water Act Section 303(d)

The CWA requires States to develop a list of impaired waters that do not meet water quality standards, establish priority rankings, and develop action plans, called Total Maximum Daily Loads (TMDLs), to improve water quality.

> *Recommendation:*
> The DEIS should provide information on CWA Section 303(d) impaired waters in the project area, if any, and efforts to develop and revise TMDLs. The DEIS should describe existing restoration and enhancement efforts for those waters, how the proposed project will coordinate with on-going protection efforts, and any mitigation measures that will be implemented to avoid further degradation of impaired waters.

Biological Resources and Habitat

The DEIS should identify all petitioned and listed threatened and endangered species and critical habitat that might occur within the project area. The document should identify and quantify which species or critical habitat might be directly, indirectly, or cumulatively affected by each alternative and mitigate impacts to these species. Emphasis should be placed on the protection and recovery of species due to their status or potential status under the Endangered Species Act (ESA). We recommend that the BLM consult with the U.S. Fish and Wildlife Service and prepare a Biological Opinion under Section 7 of the ESA if there are threatened or endangered species present. The DEIS should provide a recent status update of this report if this action has been or will be undertaken. Analysis of impacts and mitigation on covered species should include:

- Baseline conditions of habitats and populations of the covered species;
- A clear description of how avoidance, mitigation and conservation measures will protect and encourage the recovery of the covered species and their habitats in the project area;
- Monitoring, reporting and adaptive management efforts to ensure species and habitat conservation effectiveness.

EPA is also concerned about the potential impact of construction, installation, and maintenance activities (deep trenching, grading, filling, and fencing) on habitat. The DEIS should describe the extent of these activities and the associated impacts on habitat and threatened and endangered species. EPA is also aware that shade from the PV panels could impact vegetation and/or species in the project area. We encourage habitat conservation alternatives that avoid and protect high value habitat and create or preserve linkages between habitat areas to better conserve the covered species.

Recommendations:
The DEIS should indicate what measures will be taken to protect important wildlife habitat areas from potential adverse effects of proposed covered activities.

The DEIS should discuss the impacts associated with an increase of shade in the desert environment on vegetation and/or species.

The DEIS should discuss the impacts associated with constructing fences around the project site(s), and consider whether there are options that could facilitate better protection of covered species.

Invasive Species

Executive Order 13112, *Invasive Species* (February 3, 1999), mandates that federal agencies take actions to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts that invasive species cause. Executive Order 13112 also calls for the restoration of native plants and tree species. If the proposed project will entail new landscaping, the DEIS should describe how the project will meet the requirements of Executive Order 13112.

Recommendation:
The DEIS should include an invasive plant management plan to monitor and control noxious weeds.

Indirect and Cumulative Impacts

The cumulative impacts analysis should provide the context for understanding the magnitude of the impacts of the alternatives by analyzing the impacts of other past, present, and reasonably foreseeable projects or actions and then considering those cumulative impacts in their entirety (CEQ's Forty Questions, #18). The DEIS should clearly identify the resources that may be cumulatively impacted, the time over which impacts are going to occur, and the geographic area that will be impacted by the proposed projects. The DEIS should focus on resources of concern – those resources that are "at risk" and/or are significantly impacted by the proposed projects, before mitigation. In the introduction to the *Cumulative Impacts Section*, identify which resources are analyzed, which ones are not, and why. For each resource analyzed, the DEIS should:

- Identify the current condition of the resource as a measure of past impacts. For example, the percentage of species habitat lost to date.
- Identify the trend in the condition of the resource as a measure of present impacts. For example, the health of the resource is improving, declining, or in stasis.
- Identify all on-going, planned, and reasonably foreseeable projects in the study area that may contribute to cumulative impacts.
- Identify the future condition of the resource based on an analysis of impacts from reasonably foreseeable projects or actions added to existing conditions and current trends.
- Assess the cumulative impacts contribution of the proposed alternatives to the long-term health of the resource, and provide a specific measure for the projected impact from the proposed alternatives.
- Disclose the parties that would be responsible for avoiding, minimizing, and mitigating those adverse impacts.
- Identify opportunities to avoid and minimize impacts, including working with other entities.

The BLM has received more than 150 applications for solar projects in the desert southwest. As a result, BLM and the Department of Energy (DOE) are preparing a Programmatic EIS to address how they will process existing and future solar energy development applications on BLM-administered lands in six Western states. EPA is concerned about the cumulative impacts associated with the development of multiple large-scale solar projects within these states.

> *Recommendation:*
> The DEIS should consider the cumulative impacts associated with multiple large-scale solar projects proposed in the desert southwest and the potential impacts on various resources including: water supply, endangered species, and habitat.
>
> The DEIS should identify whether the proposed project is located within one of the solar energy study areas, as defined by the BLM and DOE.

As an indirect result of providing additional power, it can be anticipated that these projects will allow for development and population growth to occur in those areas that receive the generated electricity.

Recommendation:
The DEIS should describe the reasonably foreseeable future land use and associated impacts that will result from the additional power supply. The document should provide an estimate of the amount of growth, its likely location, and the biological and environmental resources at risk.

Climate Change

Scientific evidence supports the concern that continued increases in greenhouse gas emissions resulting from human activities will contribute to climate change. Global warming is caused by emissions of carbon dioxide and other heat-trapping gases. Global warming can affect weather patterns, sea level, ocean acidification, chemical reaction rates, and precipitation rates, resulting in climate change. Reports also indicate that deserts may store as much carbon as temperate forests.

Recommendations:
The DEIS should consider how climate change could potentially influence the proposed projects, specifically within sensitive areas, and assess how the projected impacts could be exacerbated by climate change.

The DEIS should quantify and disclose the anticipated climate change *benefits* of solar energy. We suggest quantifying greenhouse gas emissions from different types of generating facilities including solar, geothermal, natural gas, coal-burning, and nuclear and compiling and comparing these values.

The DEIS should discuss whether any trenching, grading, and filling associated with the construction of these projects and the installation of the solar arrays, will affect the deserts ability to store carbon, and to what degree this may occur.

Air Quality

The DEIS should provide a detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards (NAAQS), criteria pollutant nonattainment areas, and potential air quality impacts of the proposed projects (including cumulative and indirect impacts). Such an evaluation is necessary to assure compliance with State and Federal air quality regulations, and to disclose the potential impacts from temporary or cumulative degradation of air quality.

The DEIS should describe and estimate air emissions from potential construction and maintenance activities, as well as proposed mitigation measures to minimize those emissions. EPA recommends an evaluation of the following measures to reduce emissions of criteria air pollutants and hazardous air pollutants (air toxics).

Recommendations:

- *Existing Conditions* – The DEIS should provide a detailed discussion of ambient air conditions, NAAQS, and criteria pollutant nonattainment areas in all areas considered for solar development.

- *Quantify Emissions* – The DEIS should estimate emissions of criteria pollutants from the proposed projects and discuss the timeframe for release of these emissions over the lifespan of the projects. The DEIS should describe and estimate emissions from potential construction activities, as well as proposed mitigation measures to minimize these emissions.

- *Specify Emission Sources* – The DEIS should specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. This source specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention.

- *Equipment Emissions Mitigation Plan (EEMP)* – The DEIS should identify the need for an EEMP. An EEMP will identify actions to reduce diesel particulate, carbon monoxide, hydrocarbons, and NOx associated with construction activities. We recommend that the EEMP require that all construction-related engines:
    - are tuned to the engine manufacturer's specification in accordance with an appropriate time frame;
    - do not idle for more than five minutes (unless, in the case of certain drilling engines, it is necessary for the operating scope);
    - are not tampered with in order to increase engine horsepower;
    - include particulate traps, oxidation catalysts and other suitable control devices on all construction equipment used at the project sites;
    - use diesel fuel having a sulfur content of 15 parts per million or less, or other suitable alternative diesel fuel, unless such fuel cannot be reasonably procured in the market area; and
    - include control devices to reduce air emissions. The determination of which equipment is suitable for control devices should be made by an independent Licensed Mechanical Engineer. Equipment suitable for control devices may include drilling equipment, generators, compressors, graders, bulldozers, and dump trucks.

- *Fugitive Dust Control Plan* - The DEIS should identify the need for *Fugitive Dust Control Plan.* We recommend that it include these general recommendations:
    - Stabilize open storage piles and by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
    - Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions; and
    - When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Hazardous Materials/Hazardous Waste/Solid Waste

The DEIS should address potential direct, indirect and cumulative impacts of hazardous waste from construction and operation. The document should identify projected hazardous waste types and volumes, and expected storage, disposal, and management plans. It should address the applicability of state and federal hazardous waste requirements. Appropriate mitigation should be evaluated, including measures to minimize the generation of hazardous waste (i.e., hazardous waste minimization). Alternate industrial processes using less toxic materials should be evaluated as mitigation. This potentially reduces the volume or toxicity of hazardous materials requiring management and disposal as hazardous waste.

PV Production/Recycling

PV production can address the full product life cycle, from raw material sourcing through end of life collection and reuse or recycling. PV companies can minimize their environmental impacts during raw material extraction and minimize the amount of rare materials used in the product. PV manufacturing facilities exist that are zero waste and have no air or water emissions. PV companies can facilitate future material recovery for reuse or recycling. Several solar companies have developed approaches to recycling solar modules that enable treatment and processing of PV module components into new modules or other projects. Solar companies can facilitate collection and recycling through buy-back programs or collection and recycling guarantees. Several companies provide recycling programs that pay all packaging, transportation, and recycling costs.

Recommendation:
EPA recommends that the proponent strive to address the full product life cycle by sourcing PV components from a company that: 1) minimizes environmental impacts during raw material extraction; 2) manufactures PV panels in a zero waste facility; and 3) provides future PV disassembly for material recovery for reuse and recycling.

Coordination with Tribal Governments

Executive Order 13175

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was issued in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and to strengthen the United States government-to-government relationships with Indian tribes.

> *Recommendation:*
> The DEIS should describe the process and outcome of government-to-government consultation between the BLM and each of the tribal governments within the project area, issues that were raised (if any), and how those issues were addressed in the selection of the proposed alternative.

National Historic Preservation Act and Executive Order 13007

Consultation for tribal cultural resources is required under Section 106 of the National Historic Preservation Act (NHPA). Historic properties under the National Historic Preservation Act (NHPA) are properties that are included in the National Register of Historic Places (NRHP) or that meet the criteria for the National Register. Section 106 of the NHPA requires a federal agency, upon determining that activities under its control could affect historic properties, consult with the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO). Under NEPA, any impacts to tribal, cultural, or other treaty resources must be discussed and mitigated. Section 106 of the NHPA requires that Federal agencies consider the effects of their actions on cultural resources, following regulation in 36 CFR 800.

Executive Order 13007, *Indian Sacred Sites* (May 24, 1996), requires federal land managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian Religious practitioners, and to avoid adversely affecting the physical integrity of such sacred sites. It is important to note that a sacred site may not meet the National Register criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site.

> *Recommendation:*
> The DEIS should address the existence of Indian sacred sites in the project areas. It should address Executive Order 13007, distinguish it from Section 106 of the NHPA, and discuss how the BLM will avoid adversely affecting the physical integrity of sacred sites, if they exist. The DEIS should provide a summary of all coordination with Tribes and with the SHPO/THPO, including identification of NRHP eligible sites, and development of a Cultural Resource Management Plan.

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs federal agencies to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations, allowing those populations a meaningful opportunity to participate in the decision-making process. Guidance[1] by CEQ clarifies the terms low-income and minority population (which includes American Indians) and describes the factors to consider when evaluating disproportionately high and adverse human health effects.

Recommendation:
The DEIS should include an evaluation of environmental justice populations within the geographic scope of the projects. If such populations exist, the DEIS should address the potential for disproportionate adverse impacts to minority and low-income populations, and the approaches used to foster public participation by these populations. Assessment of the projects' impact on minority and low-income populations should reflect coordination with those affected populations.

Coordination with Land Use Planning Activities

The DEIS should discuss how the proposed action would support or conflict with the objectives of federal, state, tribal or local land use plans, policies and controls in the project areas. The term "land use plans" includes all types of formally adopted documents for land use planning, conservation, zoning and related regulatory requirements. Proposed plans not yet developed should also be addressed it they have been formally proposed by the appropriate government body in a written form (CEQ's Forty Questions, #23b).

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[1] Environmental Justice Guidance under the National Environmental Policy Act, Appendix A (Guidance for Federal Agencies on Key Terms in Executive Order 12898), CEQ, December 10, 1997.

"Chuck Bell" <chuckb@sisp.net>
08/05/2009 10:19 PM
To <LucerneSolar@BLM.gov>, <Rhollenbacher@chevron.com>
cc <Larry_LaPre@ca.blm.gov>
Subject Emailing: Chevron Scoping

Attached are Lucerne Valley Econ. Dev. Assoc.'s scoping comments re: Chevron Solar project. Signed copies to follow in mail.

Chuck Bell 769 964 3118

The message is ready to be sent with the following file or link attachments:
Chevron Scoping

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

August 8,2009

Email Title: no solar fields

Solar fields are not the answer to America's energy needs.

Energy generated by rooftop solar systems will be more reliable, less vulnerable, more quickly installed, and cheaper.

Problems created by solar fields such as dust, wildlife impacts, and flooding stand to destroy the desert environment.

The energy companies have vested interests in "solutions" such as solar fields that will make them the most money. The BLM and the U.S. government need to pay attention to what ordinary people are saying. Ordinary people have had enough of the lies of energy companies.

Cynthia Anderson
5524 Grand Ave.
Yucca Valley, CA 92284
760-228-9062
www.andersonwritingservices.com
www.rainbear.com

US EPA DETAILED COMMENTS ON THE SCOPING NOTICE FOR THE PROPOSED LUCERNE

AV 1988
A Better Way of Life

Town of Apple Valley

14955 Dale Evans Parkway • Apple Valley, California 92307

August 11, 2009

BLM Desert District Office
Greg Thomsen
22835 Calle San Juan de Los Lagos
Moreno Valley, Ca. 92553

Re: Lucerne Valley Solar Project – Scoping Comments

Dear Mr. Thomsen

The Town of Apple Valley appreciates the opportunity to comment on the above referenced proposal. The project is located southeasterly of the Town limits and Sphere of Influence. The Town of Apple Valley is providing comment during the public scoping processing so that the concerns of the Town can be addressed in the EIS.

The Town of Apple Valley requests that BLM identify within the EIS any impacts related to traffic to Highway 18 and Bear Valley Road within the Town's Sphere of Influence and within the Town limits. The project will result in additional traffic, both short term (construction traffic) and long term that have the potential to impact Highway 18 and Bear Valley Road as these major thoroughfares are the primary access to the site from I-15. Any impacts that are identified through a traffic study should be mitigated.

The Town of Apple Valley requests that BLM identify within the EIS any impacts related to water resources and water quality.

It would appear that the solar project intends to use the existing SCE distribution power line. If the proposal requires an upgrade to this power line, the impacts associated with the upgrade should be addressed.

If you have any questions on this matter, please call me at (760) 240-7000, Ext. 7222. Town offices are open Monday through Thursday between 7:30 a.m. and 5:30 p.m., and alternating Fridays 7:30 a.m. and 4:30 p.m. **(closed the subsequent Fridays).**

Sincerely,

Carol Miller

Carol Miller
Senior Planner

August 13, 2009

Email Title: I Support the Lucerne Valley Solar Project

Hello,

I just wanted you to know I live in Johnson Valley and have had family owned property for 56 years and I support the Chevron Lucerne Valley project. Please continue to allow growth and investment in public lands. This is an excellent resource for generations to come. Rich Rohr 50577 Joshua Tree Road Johnson Valley Ca 92285-2822 760-403-0496.

August 15, 2009
Email Title: Hooray for solar

I'm all for solar anywhere it can be installed. We have plenty of sun so the desert is the perfect place. It will help us get off our reliance on foreign oil.

Gloria Williams
Johnson Valley

"Chuck Bell" <chuckb@sisp.net>
08/16/2009 03:37 PM
To <LucerneSolar@BLM.gov>, <Rhollenbacher@chevron.com>
cc
Subject Chevron Solar - Lucerne Valley

Greg and Ralph:

Re: Chevron Energy Solutions' PV project in Lucerne Valley::

The scoping session in LV seemed relatively tame. Due to the sheer number of alt. energy proposals confronting us - we can't help but be concerned about global/cumulative issues. But this could be a good location - especially with the adjacent powerline connection.

If you haven't already selected an environmental/land-use consultant - I highly recommend Tom Dodson and Associates. Office in San Bernardino - has handled many desert projects - personally knows all the agency contacts - has biologists on staff - works fast and efficiently - very experienced with NEPA process and documents.

Tom Dodson - 909 882 3612 - tda@tdaenv.com

Let me know if you need any other info.

Will be interesting to see the scoping comments when released.

Chuck Bell 760 964 3118

August 17, 2009

my comment on the negative effects of lucerne solar.

the proposed solar project at lucerne valley should be denied permits,etc. and not allowed to be built and regulated against because of the excessive amount of damage that would be caused by all the activity and destruction of habitat in this region.the fragility of this desert region is extremely hard to ever repair if at all and fragmenting it is really destructive. if a solar plant was built in the city proper it would revitalize distressed regions that need rebuilt anyway,provide work for locals,cost less to rebuild power lines in the city that probably need upgraded anyway to smart grid as well.

Kim Bauer

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adzei bekoe <adzeibekoe224@msn.com>
08/18/2009 06:56 PM

YOUR KIND ATTENTION :

RE: PROJECT FUND ALLOCATION ;
VIDE PROJECT REFERENCE #:
EB/6791/VOL9/02

I WISH TO NOTIFY YOU THAT YOUR LONG OVERDUE PROJECT FUND HAS BEEN GAZETTED TO BE FINALLY RELEASED TO YOU THROUGH THE FOREIGN REMITTANCE DEPARTMENT OF THIS BANK. MEANWHILE, A WOMAN CAME TO MY OFFICE FEW DAYS AGO WITH A LETTER CLAIMING TO BE YOUR REPRESENTATIVE AND SENT BY YOU.

HERE ARE HER INFORMATION'S:
NAME: BARBARA KLEIHANS
BANK NAME: ATLANTIC BANK OF NEW YORK.
ACCOUNT NUMBER: 08971400101125.

DO CONFIRM TO ME AS A MATTER OF URGENCY IF THIS WOMAN IS FROM YOU SO THAT THIS OFFICE WILL NOT BE HELD RESPONSIBLE FOR WRONGFUL PAYMENT OR UNLAWFUL DIVERSION OF THE PROJECT FUND TO A WRONG PERSON.

THE RESERVE BANK GOVERNOR, EXECUTIVE BOARD OF DIRECTORS AND THE FEDERAL COMMITTEE FOR FOREIGN PROJECT PAYMENT HAS APPROVED FUND ALLOCATION TO THIS REPUTABLE BANK WITH THE OFFICE OF THE DIRECTOR OF FOREIGN REMITTANCE / OPERATIONS TO HANDLE AND TRANSFER ALL PENDING FOREIGN PROJECT/INHERITANCE PAYMENT THROUGH THE FEDERAL GOVERNMENT RESERVE ACCOUNT WITH THE BANK.

WE SHALL PROCEED WITH THE PAYMENT TO THE SAID MRS. BARBARA KLEIHANS IF WE DO NOT HEAR FROM YOU WITHIN 48 HOURS AS WE WILL TAKE IT AS YOU ISSUED AUTHORIZATION TO HER. IF OTHERWISE, YOU ARE TO IMMEDIATELY REPLY ME BACK RECONFIRMING THE

BELOW INFORMATION FOR FINAL APPROVAL/REMITTANCE OF THE FUND PAYMENT TO YOU.
1. FULL NAMES AND PHYSICAL RENTAL ADDRESS (POSTAL ADDRESS)
2. DIRECT TELEPHONE NUMBER OR MOBILE NUMBER (TO FACILITATE EASY COMMUNICATION)
3. AGE AND OCCUPATION
4. NAME AND ADDRESS OF NEXT OF KIN

TO FACILITATE PROMPT RESPONSE, SEND YOUR REPLY TO THE DIRECTOR VIA THE BELOW CONTACT DETAILS;
(Email: adzeibekoe@gmail.com)

THANKS FOR YOUR ANTICIPATED COOPERATION.
BEST REGARDS,
MR. ADZEI BEKOE
FOR: ECO BANK INTL. PLC
TEL:+233 28 519 6822

"Hollenbacher, Ralph Harold" <RHollenbacher@chevron.com>
08/18/2009 09:02 AM
To "Chuck Bell" <chuckb@sisp.net>, <LucerneSolar@BLM.gov>
cc "Don, Juliet C" <Juliet.Don@chevron.com>
Subject RE: Chevron Solar - Lucerne Valley

Thanks Chuck. We realize the sensitivity to cumulative issues. Although we believe that a project such as we are proposing will have minimal impacts on the environment and the community, we can neither ignore nor control the impacts posed by larger energy projects proposed for the area. As you point out, these impact will all need to be assessed systematically in the environmental review processes for the proposed projects.

Unfortunately, we have already selected Ecology and Environment as the contractor for preparing the Environmental Impact Statement and Chambers Group for doing the cultural and biological survey work for the Lucerne project.

Regards,

Ralph Hollenbacher
Senior Manager - Technical Services
Large Scale Renewables
Chevron Energy Solutions
345 California Street, 18th Flr.
San Francisco, CA 94104
Tel: 415 733 4910
Fax: 415 733 4639
Mobile: 415 250-2672

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August 21, 2009

Delivered via electronic mail (*lucernesolar@blm.gov*) and U.S. mail.

Greg Thomsen, Project Manager
CA Desert District Office
Bureau of Land Management
22835 Calle San Juan de Los Lagos
Moreno Valley, CA 92553-9046

Re: Scoping comments on the Lucerne Valley Solar Project

Dear Mr. Thomsen,

Please accept and fully consider these comments on the Lucerne Valley Solar Project on behalf of The Wilderness Society.

The mission of The Wilderness Society is to protect wilderness and inspire Americans to care for our wild places. We have worked for more than 70 years to maintain the integrity of America's wilderness and public lands and ensure that land management practices are sustainable and based on sound science to ensure that the ecological integrity of the land is maintained. With more than half a million members and supporters nation-wide, TWS represents a diverse range of citizens.

It is clear that the nation's growing addiction to fossil fuels, coupled with the unprecedented threats brought about by global warming, imperil the integrity of our wildlands as never before. To sustain both our wildlands and our human communities, The Wilderness Society believes the nation must transition away from fossil fuels as quickly as possible. To do this, we must eliminate energy waste, moderate demand through energy efficiency, conservation, and demand-side management practices, and rapidly develop and deploy clean, renewable energy technologies, including at the utility-scale.

Our public lands harbor substantial wind, solar, and geothermal resources. Developing some of these resources will be important to creating a sustainable energy economy and combating climate change, and The Wilderness Society supports such responsible development of renewable energy. Renewable resource development is not appropriate everywhere on the public lands, however, and development that does occur on the public lands must take place in a responsible manner.

Continue to Improve the Process

In general, as your agency, the Bureau of Land Management (BLM), processes applications for solar development on public lands, we urge you to continue to improve the process. Among the areas where additional guidance is needed are: incorporating additional Best Management Practices (BMPs), refining the Right of Way (ROW) application process to properly address the differences between solar development and other uses of ROWs, and incorporating recommendations from ongoing transmission planning. In general, BLM should prioritize and help guide renewable energy development toward land that has already been developed for industrial, agricultural, or other intensive human uses which are close to existing transmission over ecologically-intact public lands.

Our organization supports and is actively engaged in a number of multi-stakeholder processes aimed at identifying environmentally appropriate areas for solar energy development in California and the West, including the California Renewable Energy Transmission Initiative (RETI), the Western Governors' Association's Western Renewable Energy Zone process, and the BLM's plan to develop a Programmatic Environmental Impact Statement on Solar Energy. We urge you to incorporate the work of these processes as you move forward with permitting solar energy projects in the desert.

In addition, our organizations have worked with other members of the environmental community in California to develop criteria for use in identifying appropriate areas for development in the CDCA as well as a vision for both the kind of planning and the kind of plan needed to protect the desert's remarkable resources while addressing the climate challenge effectively. Fundamentally, success in selecting appropriate areas and achieving the over-arching objective which we all share will require an unprecedented degree of state and federal cooperation as well as close collaboration with our community. This Environmental Impact Statement prepared in cooperation with tribal, state and local governments is a key step in the kind of cooperation we envision, but it is not sufficient alone. Given what is at stake, such cooperation is unquestionably warranted and it is our hope that the identification and application of these criteria will contribute to that result.

The criteria, which are attached, are designed to help guide renewable development, principally solar development, to appropriate locations. More specifically, the criteria are intended to inform current and future planning processes and to provide ecosystem level protection to the CDCA (including public, private and military lands) by giving preference for development to disturbed lands, steering development away from lands with high environmental values, and protecting the desert's undeveloped cores. Developed with input from field scientists, land managers and conservation professionals, the criteria in essence seek to steer renewable energy projects to areas with comparatively low potential for conflict and controversy in order to facilitate their timely development. In other words, the "message" the criteria are intended to deliver is that to expedite development, avoid areas that will generate significant controversy.

The environmental community will be employing the criteria in reviewing "fast-track" energy projects such as the Lucerne Valley Solar Project, as well as in reviewing proposed solar energy study areas and we encourage your agencies to do so as well. "Fast-track" projects are those which may be able to qualify for stimulus funding through the American Recovery and Reinvestment Act of 2009 by breaking round by December, 2010. Because of the significant timing challenges facing projects seeking permits under such a short timeframe, it is especially important that these projects be screened for characteristics conducive to solar development and potentially difficult or controversial issues. Use of the attached criteria, as well as other screens, will allow your agencies to realistically assess the feasibility of getting projects permitted and "shovel ready" by December, 2010. A realistic assessment of "shovel ready" viability will allow for better allocation of limited agency resources to those projects with the highest likelihood for success.

At the same time, however, we believe it is urgent that BLM work together with stakeholders to develop as quickly as possible a comprehensive approach to evaluating future projects that will ensure that the most appropriate sites for development are utilized while more sensitive sites are protected and preserved. Rather than proceed on a project by project basis in the future, we support a more comprehensive approach to the siting of these projects, the identification of areas appropriate for development, and the prioritization of already disturbed areas. We urge that you begin developing this approach as promptly as possible and would be pleased to help in any way we could.

I. RELATIVE SUITABILITY OF PROJECT PROPOSAL SITE

The Lucerne Valley Solar Project proposal site has both elements conducive to the proposed solar development and issues which will need to be addressed in the agencies' analysis. The sections below outline those characteristics and make recommendations for addressing them.

California Solar Energy Siting Criteria

As indicated above, Lucerne Valley Solar Project has been identified by BLM as a "fast track" project. In reviewing this project, conservation groups will be applying the criteria they developed in addition to considering the issues identified by the agencies and through review of the applicant's documents. Some groups may submit results of this analysis during scoping; we and others may submit results at later date. The agencies would do well to apply these criteria themselves, as well as incorporating the analyses of the groups when they are made available. This is particularly important considering the tight timetable applicable to this project.

Characteristics Conducive to Utility-Scale Solar Development

Like other environmental and conservation groups and as stated above, we believe that solar (and other renewable) development in the CDCA should be steered away from unique and sensitive areas, from the region's undeveloped core, and from lands that are not adjacent to transmission and other needed infrastructure.

The site does not contain designated sensitive and protected areas such as Areas of Critical Environmental Concern, nor has been it been proposed by citizens for designation as wilderness.

The site does have high value solar resources and is close to major infrastructure, private land, and other developments, as well as existing transmission and existing roads.

All of these attributes contribute to the possibility that development of a commercial scale solar facility on this site could result in an overall benefit in limiting the negative impacts of climate change on public lands by decreasing the amount of greenhouse gas emissions from electricity production.

Resource Concerns

There are number of resources on the site that require an in-depth analysis of the impacts of the proposed project and development of a comprehensive impacts minimization and mitigation strategy.

The project site is relatively undisturbed and includes a wash coming down from the San Bernardino Mountains. In addition, the area provides opportunities for horseback riding, hiking, wash walking, and wildflower viewing. Development of such a site requires further study to ensure that other values will not be unacceptably impacted, as well as careful consideration of alternative configurations and alternative sites in the forthcoming federal/state environmental review.

Through the permitting process, BLM and Chevron Energy Solutions may be able to develop this project in a way that supports climate change goals while adequately minimizing and mitigating impacts.

A. Biological Resources

"The DEIS should identify all petitioned and listed threatened and endangered species and critical habitat that might occur within the project area. The document should identify and quantify which species or critical habitat might be directly, indirectly, or cumulatively affected by each alternative and mitigate impacts to these species. Emphasis should be placed on the protection and recovery of species due to their status or potential status under the Endangered Species Act (ESA). The DEIS should include a biological assessment, as well as a description of the outcome of consultation with the U.S. Fish and Wildlife Service under Section 7 of the ESA. Analysis of impacts and mitigation on covered species should include:

- Baseline conditions of habitats and populations of the covered species;
- A clear description of how avoidance, mitigation and conservation measures will protect and encourage the recovery of the covered species and their habitats in the project area;
- Monitoring, reporting and adaptive management efforts to ensure species and habitat conservation effectiveness.

The DEIS should indicate what measures will be taken to protect important wildlife habitat areas from potential adverse effects of proposed covered activities. We encourage habitat conservation alternatives that avoid and protect high value habitat and create or preserve linkages between habitat areas to better conserve the covered species."[1]

Desert Tortoise

The desert tortoise (*Gopherus agassizii*) is protected under federal and state Endangered Species Acts as "threatened" (USFWS 2006). Despite the listing and attention the species receives for recovery and conservation efforts, populations continue to experience decline due to the cumulative impact of human-based stressors.

There are documented occurrences of desert tortoise in the project area. The applicant would be required to relocate any desert tortoise found in the area of potential effect. Identifying relocation habitat can be a complex task, and relocation can impact individual tortoises or entire recovery units. In addition, the applicant would be required to provide mitigation in the form of habitat protection through acquisition and permanent conservation of those lands.

Recommendation: The BLM should prioritize protection of species in the project proposal area by further analyzing potential impacts and developing Best Management Practices and steps to minimize and mitigate any unavoidable impacts.

B. Cultural Resources

The BLM must adequately evaluate the environmental consequences of the proposed project on historic resources. They must address cultural resource issues in the DEIS. The NEPA regulations recognize that impacts to cultural resources such as historic properties and "scientific resources" can comprise a significant impact on the environment. 40 CFR 1508.27(b)(3),(8). Additionally, BLM must analyze the direct, indirect, and cumulative impact of each alternative on areas of importance to local Tribes and areas of high cultural site density.

Additionally, we urge BLM to begin the Section 106 process under the National Historic Preservation Act (NHPA), 16 U.S.C. § 470f, because the project may impact historic properties. The requirements of NHPA are separate from NEPA's requirements, although the Section 106 regulations encourage federal agencies to coordinate the two processes. See 36 C.F.R. § 800.2(a)(4). Proper coordination of the NHPA and NEPA compliance actions is necessary to ensure that adverse effects to historic properties are adequately considered pursuant to the Section 106 regulations, 36 C.F.R. § 800, *et seq.* Proper coordination with Native American tribes will be a central component of the consultation process.

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[1] July 7, 2009 letter from the EPA to the BLM and CEC on the: Notice of Intent to Prepare an Environmental Impact Statement/Staff Assessment and Proposed Land Use Plan Amendment for the Proposed SES Solar One Project, San Bernardino County, California (here in after referred to as "July 7, 2009 letter"). Found at http://www.energy.ca.gov/sitingcases/solarone/documents/others/2009-07-07_Scoping_Comments_from_US_EPA_TN-52483.pdf.

Recommendation: BLM should prioritize protection of the area's cultural resources, including study of the area's resources, development of strategies to minimize and mitigate impacts, and ongoing engagement in consultation with local Native American tribes.

C. Soil Resources

Impacts to soil resources are one of the most challenging issues for solar projects proposed in the desert. As seen in the ongoing permitting process for the proposed Ivanpah Solar Energy Generating System, development of adequate drainage, erosion and sediment control plans is a complicated, time consuming and challenging task. To ensure robust environmental protections and timely completion of permitting documents and steps, it is critical that both the project applicant and the agency dedicate adequate time and resources early in the process to addressing these issues thoroughly.

Recommendation: Chevron Energy Solutions and BLM should dedicate adequate time and resources early in the process to addressing soil resources issues adequately, including through the preparation of a detailed drainage, erosion and sediment control plan that addresses these potential impacts and provides mitigation measures that will render these hazards to a level less than significant.

D. Water Resources

Water is a limited resource in the desert southwest, and any project proposal should fully analyze the water needs and identify sources to meet those needs. However water use for the project will be much less than for other solar technologies, minimizing its impact to water resources compared to alternative technologies.

Recommendation: BLM should gather additional information to confirm that the water needed for the Lucerne Valley Solar Project will be available as well as that the source of the needed water will conform to all laws, ordinances, regulations and standards (LORS).

E. Visual Resources

There will be visual impacts from the construction of the Lucerne Valley Solar Project. Although the visual impacts for this project will be much less than for other solar technologies, the construction of an industrial development anywhere on public lands will entail some visual impacts. Yet, the benefits which the Lucerne Valley Solar Project will provide may well outweigh the costs of the visual impacts from this development.

However, there are a significant number of projects proposed for the California Desert. Accordingly, we urge the BLM to assess not just the visual impacts from this project, but also the likely cumulative visual impacts from proposed renewable energy and transmission development in the Desert and begin now to develop comprehensive mitigation strategies to address these impacts in connection with future projects.

Recommendation: The BLM and Chevron Energy Solutions should continue to collaborate on a visual analysis conforming to BLM regulations to address concerns identified in during the scoping period.

G. Land Use

The Lucerne Valley Solar Project will require a CDCA Plan Amendment, as will all new solar projects. We assume that the environmental review of the proposal and the necessary plan amendment will occur simultaneously. See 43 CFR § 1601.6-3(b).

In addition, the site is adjacent to private parcels. While the private parcels are not part of the project, resources on these parcels and the county's ability to manage these resources could be impacted by construction and operation of the Lucerne Valley Solar Project.

Recommendation: "The DEIS should discuss how the proposed action would support or conflict with the objectives of federal, state, tribal or local land use plans, policies and controls in the project area. The term "land use plans" includes all types of formally adopted documents for land use planning, conservation, zoning and related regulatory requirements. Proposed plans not yet developed should also be addressed it they have been formally proposed by the appropriate government body in a written form (CEQ's Forty Questions, #23b)."[2]

The plan amendment must fully analyze the impacts of industrial development on public lands of an undisturbed nature.

II. OTHER ISSUES RAISED BY THE LUCERNE VALLEY PROJECT PROPOSAL

A. Public Benefits (GhG reduction)

Renewable energy development can have multiple public benefits, most importantly combating climate change by reducing greenhouse gas (GhG) emissions from energy production, and including reduced local and regional air and public health impacts, increased energy resource diversity and decreased price volatility. A reduction in GhG emissions from developing renewable energy is based on comparative emissions from fossil fuel-based energy production.

Because a reduction in GhG emissions is a primary public benefit of renewable energy development, it is critical that the agencies quantify this reduction to the extent possible. The agencies' analysis of GhG reductions should also include a comprehensive look at the project's impacts, including GhG emissions during manufacture, construction, operation, decommissioning, and reclamation of the project site.

The results of this analysis should then be compared to similar analyses for fossil-fuel based energy production, including combined-cycle natural gas fired and coal fired power plants.

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[2] July 7, 2009 letter.

Such an analysis will provide the public a clear indication of the costs and benefits of the proposed project and allow stakeholders to make decisions regarding the project based on the best available science and data.

Recommendation: The BLM should comprehensively analyze the Lucerne Valley Solar Project's net reductions to GhG emissions, including GhG emissions during manufacture, construction, operation, decommissioning, and reclamation of the project site. The analysis should consider both the potential for the project to reduce GhG emissions as well as potential for the project to increase GhG emissions, for example, by disturbing undisturbed land currently useful for carbon sequestration. The results of this analysis should then be compared to the same type of analysis for fossil-fuel based energy production, including combined-cycle natural gas fired and coal fired power plants.

C. Bonding

Based on communications with the BLM, we understand bonding will be required of the applicant for the purpose of decommissioning the project. We fully support the effort of the BLM in creating these bonding requirements, and encourage the Bureau to develop a robust set of guidelines for establishing appropriate bonding figures.

Recommendation: The BLM should do a thorough analysis of the anticipated costs of decommissioning and restoring the project site. The BLM should also require bonds be purchased prior to development.

D. Alternative Sites

Consideration of alternative sites is critical to ensuring the Lucerne Valley Solar Project site chosen is the best possible location for the project. This consideration should be based on solar resource, proximity to existing transmission and infrastructure, and conflicts with other resources and values on the project site. BLM's policy requires consideration of alternatives. The National Environmental Policy Act (NEPA) requires that BLM consider a range of management alternatives, and this analysis is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. NEPA requires BLM to "rigorously explore and objectively evaluate" a range of alternatives to proposed federal actions. See id. §§ 1502.14(a) and 1508.25(c). "An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action."[3] An agency violates NEPA by failing to "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action.[4] This evaluation extends to considering more environmentally protective alternatives and mitigation measures.[5]

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[3] Northwest Envtl Defense Center v. Bonneville Power Admin., 117 F.3d 1520, 1538 (9th Cir. 1997).

[4] City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9th Cir. 1990) (quoting 40 C.F.R. § 1502.14).

[5] *See, e.g.*, Kootenai Tribe of Idaho v. Veneman, 313 F.3d 1094,1122-1123 (9th Cir. 2002) (and cases cited therein).

NEPA requires that an actual "range" of alternatives is considered, such that the Act will "preclude agencies from defining the objectives of their actions in terms so unreasonably narrow that they can be accomplished by only one alternative (i.e. the applicant's proposed project)."[6] This requirement prevents the EIS from becoming "a foreordained formality."[7] "Note that NEPA requires evaluation of reasonable alternatives, including those that may not be within the jurisdiction of the lead agency (40 CFR Section 1S02.14(c))."[8]

It is the BLM's responsibility to identify alternative sites to be analyzed and it may be that options rejected previously should be re-evaluated. Without thorough consideration of multiple alternative sites, the BLM will have reduced the EIS to a "foreordained formality" and improperly limited the alternatives under consideration.

"The environmental impacts of the proposal and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public (40 CFR 1502.14). The potential environmental impacts of each alternative should be quantified to the greatest extent possible (e.g., acres of wetlands impacted, tons per year of emissions produced, etc.)."[9]

As previously expressed in these comments, we strongly encourage the BLM to engage in a broader landscape level assessment of solar development in the desert. While a comprehensive desert plan balancing multiple land uses including solar will be a long term process, in the interim we urge the agencies to compare the Lucerne Valley Solar Project, and all other fast track projects, to each other in order to identify which of these first phase of projects is likely to have the least environmental impacts.

Recommendation: The BLM must thoroughly consider and present the public with a true range of alternative sites. "Reasonable alternatives should include, but are not necessarily limited to, alternative sites, capacities, and technologies as well as alternatives that identify environmentally sensitive areas or areas with potential use conflicts."[10] We encourage the BLM to analyze an alternative project site on previously disturbed lands.

In addition the agencies should compare the Lucerne Valley Solar Project and its impacts with all other identified "fast-track" projects on BLM land in order to identify the least environmentally harmful projects among the applications that have been selected for expedited permitting.

Thank you for your consideration of these comments.

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[6] Colorado Environmental Coalition v. Dombeck, 185 F.3d 1162, 1174 (10th Cir. 1999), citing Simmons v. United States Corps of Engineers, 120 F.3d 664, 669 (7th Cir. 1997).

[7] City of New York v. Department of Transp., 715 F.2d 732, 743 (2nd Cir. 1983). *See also*, Davis v. Mineta, 302 F.3d 1104 (10th Cir. 2002).

[8] July 7, 2009 letter.

[9] July 7, 2009 letter.

[10] July 7, 2009 letter.

Sincerely,

The Wilderness Society
Alice Bond, Public Lands Associate
California/Nevada Regional Office
655 Montgomery Street, Suite 1000
San Francisco, CA 94111

The Wilderness Society
Alex Daue, Renewable Energy Coordinator
BLM Action Center
1660 Wynkoop St. Suite 850
Denver, CO 80202

August 22, 2009

From
Betty Munson
4880 Bonanza Rd.
Johnson Valley, CA 92285
760-364-2646

To
Greg Thomsen, BLM Program Manager
Mickey Quillman, BLM
Ralph Hollenbacher, Chevron Energy Solutions
Dave Plumpton, E&E

Dear Sirs,

I am writing as a private citizen, not as a representative of any organizations to which I belong. Please feel free to contact me about any questions you may have about these statements. Please add me to your mailing list on this project.

OLD WOMAN SPRINGS RD. (SR 247) is a County Scenic Route.
"Scenic Routes play an important role in the preservation and protection of environmental assets. Scenic Route designations recognize the value of protecting scenic resources for future generations and place restrictions on adjacent development including specific sign standards regarding sign placement and dimensions, utility placement, architectural design, grading, landscaping characteristics and vegetation removal." – County of San Bernardino General Plan

The process is under way to have SR247, from Yucca Valley through Lucerne Valley and up to Barstow, designated as a California Scenic Highway.

The Homestead Valley Community Council and the Lucerne Valley Economic Development Association support the research now in progress to have Old Woman Springs Road declared an Historic Road.

The fact that this proposed solar project may not be visible in its entirety from Old Woman Spring Rd. (SR247) does not negate the fact that it is just the first solar proposal to get to the Public Scoping stage.

Industrial-scale installations on public lands are a questionable use of multi-use lands. The study **must** address the uglification effect of this first installation: the effect on the values of surrounding private lands; causing the easily foreseeable sale of private lands and permitting of other public lands for other renewable energy installations; and the negative impact that this proliferation and inevitable transmission lines will have on the scenic/historic route from which they will be visible.

Visual impact counts! The rural communities and the open spaces surrounding them are the goal of many who leave the urban sprawl behind for recreation in the desert. The rural communities depend in large measure on the tourist dollar, as does the county, as does the state.

Frederick Law Olmstead said it far better than I can, in his *Report of State Park Survey of California, 1929.*

"Certain desert areas have a distinct and subtle charm, in part dependent on spaciousness, solitude, and escape from the evidence of human control and manipulation of the earth, a charm of constantly growing value as the rest of the earth becomes more completely dominated by man's activities. This quality is a very vulnerable one….Nowhere else are casual thoughtless human changes in the landscape so irreparable, and nowhere else is it so important to control and completely protect wide areas."

Everybody knows this by now. Even multinational energy companies. What everybody may not realize is that protecting the rural desert communities and the public open spaces that surround them is just as important as protecting wilderness and wildlife habitat.

Chevron Energy Solutions already know how to install solar panels on roof tops. I ask that they continue to do so and leave the desert alone.

Betty Munson

Appendix H
Scoping Meeting Sign-In Sheets and Speaker Cards

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Bureau of Land Management

Public Scoping Meeting

Lucerne Valley Solar Project EIS

Lucerne Valley, CA – July 29, 2009

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SIGN-IN SHEET

Presentation starting promptly at 7:00 PM ***(PLEASE PRINT LEGIBLY)***

Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
Blanche Kraft		P.O. Box 723 LV	248-7942		
CHRISTIE ROBINSON Also live in Lucerne Valley	MOJAVE ENVIRONMENT EDUCATION CONSORTIUM	14306 PARK AVE VICTORVILLE 92395	245-1661x 6101	christier@mdaqmd.ca.gov	Yes
Donna Thomas	Calif Desert Coalition	P.O. Box ~~8~~813 Morongo Valley, CA 92256	369-8917	thomasruby~~2~~@verizon.net	~~3~~ No
Betty Munson	JVIA, AREP PFJV	4880 Bonanza Rd Johnson Valley	364-2646	ranchotaj@gmail.com	Yes
Catherine Janowicz Jim Harvey	JVIA HVCC AREP	50220 Saddle Rock Way		desertmoon2@live.com	Yes
RICHARD SELBY	LVMAC LVEDA	P.O. BOX 941 LV 92356		richard@gentryselby.com	YES
Daryl + Cindy Lazenby	Property owners	POBOX 845 Lucerne Vly			Yes

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
CLAUDIA SALL	CDC	Y.V., CA 92286 PO Box 1588	760 365 9366	Sallwildcats@ gmail.com	Yes
Jennifer Hinojosa		31351 Rabbit Springs Rd L.V. 92356	760 680-9456	jjrestorationservice@yahoo.com	✓
Jim Hunt		51568 DUNDEE RD	760 364-4829	JHAFLAME@AOL.COM	
C. HAWKINS	FOGR	57873 IVANHOE Yucca Valley	760 365-5983		✓
MIKE HAWKINS	FOGR	SAME ↑	365-5983	MPHCDH@WMCONNECT.COM	✓
D'Anne Albers	DEFENDERS of WILDLIFE	PO BOX 953 J.T. 92252	361-7416	DAlbers@defenders.org	X
Felix Wu		P.O. BOX 1097 Lucerne Valley CA 92356	760-401-2456	Felixcwu@hotmail.com	✓

FOGR = Friends of Giant Rock

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
BoB Burks	SCBS	Po Box 1407 Yermo CA 92398	760 254 6001	OASis pALms@zerizon.net	✓
Gary Hatfield	SCBS	36986 Kilkare Rd Mentone, CA 92359	(909) 794-3385	mtnhomehat@yahoo.com	Yes
Linda Gommel Ernie Gommel	Lucerne Valley Mkt + Hardware	PO Box 749 L.V. 92356	760 2487311	lvstore@sisp.net	Yes
Eddie Sims.	Citizen	35893 Old Woman Springs Rd LV 92356	760 248 7454		yes.
Bill Lembright Jan Lembright	Lucerne Valley Market & Hardware	PO Box 749 LV 92356	(760) 248-7311	~~[illegible]~~ lvstore@sisp.net	yes
David Danelski	The Press Enterprise	3450 14th St Riverside, CA 92501	951-368- 9471	ddanelski@pe.com	yes

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
BRADLEY EVANS	CitiZEN	P.O. BOX 1055 L.V. Ca 92356	760-963-7556	elwhoppero@hotmail.com	Yes
Kate Rosenberg	L.V. leader		760.248.7878	Krosenberg@vvdailypress.com	yes
KENZIE RIESSELMAN	interested in project			Kenz@uwalumni.com	yes
Eric Weiss	CDFG	12550 Jacaranda Ave. Victorville CA 92395		eweiss@dfg.ca.gov	Yes
Roger Peterson	LV LAND OWNER & myJeeptraks.com	7979 SKY HIGH LN. LV, CA 92356	760-403-8241	nbijn@gotsky.com	YES
GREGORY BURLIN	PROPERTY OWNER	9271 BAKER RD. P.O-BOX 681 L.V CA. 92356	760.248.6633	gBURLIN5@GMAIL.COM	YES

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
LARRY MAYER	RESIDENT	PO BOX 1083 LUCERNE VALLEY CA 92356		LARRYMAYER@HOTMAIL.COM	YES
GLEN DAVIDSON	RES	9153 OXBOW Rd LV		KGUYGLEN@SBCGLOBAL.NET	Y
Gary Applegate	Resident	PO Box 1879 LV 92356			Yes
Dennis Pond	Resident	PO Box 1628 Lucerne 92356		dennispond@gmail.com	Yes
MIKE/[illegible]	FOGR	57873 IVANHOE YUCCA VALLEY	760 365 5983	MPHCDH2@WMCONNECT.COM	
GARY STATER	Property Owner	P.O. Box 9	760-247-7231	gr.slater@verizon.net	yes
Ray Pessa Mary Jo Pessa	FOGR	58725 Natoma Tr	760-365-7449	Pessarl@netzero.com	yes

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
Ron Chapman	prop. owner	P.O.B 152 LV	626 791-3794	rcchapman@AVC.EDU	yes
TERRY HOLLIS	" "	PoB 112 L.V.	248-2903	GMR@SISP.NET	YES
Chad Burlin	prop. owner	9271 Baker Rd.	(760) 248-6633	burlin5@gmail.net	Yes
Jim Mesnard	LVIA	36266 Wilshire	760 248-9657	Jim@Pack-it-up.com	Yes
Carrie Hyke	County of San Bernardino	385 N. Arrowhead Ave. San B.	(909) 387-4147	Chyke@lusd.sbcounty.gov	Yes
Kassandra Fischer	" "	" "	" "	Kfischer@lusd.sbcounty.gov	

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
Wendy Clouser		36163 Smokebush PO Box 2343 Lucerne Valley, CA	760 8103735	YES →	
Ted + Joyce Vlahos		38430 Oldwoman Spr Rd L.V. Ca	760 248-6910		
Paul Malone		36140 Olive St Lucerne Vly	248-6592		YES
Carl Coleman		19531 Hwy 18 Apple Valley 92307	760-242-9900	ALTECENG@AOL.COM	YES
Helen Baker		5004 Enfield Ave. Encino, Ca 91316	818-705-3930	bakerhab@aol.com	YES
Kenny Ent		17222 Sycamore Ln. Apple Valley, CA.	760-285-6938	Kent@pauleyc.com	YES
Barbdett LaGrange		18220 Fern Rd LV	248-6777		NO

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
ERNEST TIBBS		LUCERNE VALLEY PO BOX 1375			
Billy & Julie Mitchell		JOHNSON Valley 7.0 2A	760 447 3903	~~Re~~ rattlesnakecanyonranch@gmail.com	
Peter Peña		36325 Smokebush Rd L.V. CA. ~~356~~ 92356			Yes
Raymond Regisle		11122 TRADE Post Road Lucerne Valley CA 12356	None		
ED TEIGEN		9930 CUSTER	248 2601	rusty@sisp.net	yes
Jo RicHARDS		32226 HOLMES P.O. BOX 482	248-9354	EDR@SISP.NET	YES
Barbara Veale		PO Box 1179	248-7208		yes

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
Randy & Ginger Coleman		19531 Hwy 18 Apple Valley, CA 92307	(760) 242-9900	RandyAKP@AOL.com GingerEColeman@AOL.com	YES
John Beavor		PO Box 1216 Lucerne Valley 92356	(760) 2487448	Goatgirl@sisp.net	okay
Patti Riddle		POBX 682 Lucerne Vally	760 248 2062	mpgku1972@yhoo.com	Yes
Max Riddle		P.O.Box 640 Lucern Vly	760 248-2277	mgcoogAR67_73@Hotmail.com	Yes
April Sall	CDC	P.O.Box 395 Pioneertown, CA	760 369-7105	—	
Jamie Hall	TWC	P.O. Box 395 Pioneertown, CA	760 369 7105	jamie@wildlandsconservancy.org	Yes
Jeff Croux		31351 Rabbit Springs Rd L.V.	760-680-4819	JJRestorationService@yahoo.Com	Yes

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
Chuck Bell	L.U. Econ. Dev. Assoc.	P.O. Box 193 Lucerne Valley, CA 92356	760 964 3118	chucsb@sisp.net	yes
Steve Colangelo		31222 Sherwood St. Lucerne Valley CA 92356	760-248-7462	drcolangelo@hotmail.com	No

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
SCOTT FRIER	DEVELOPER		(760) 962-9200	sdfrier@msn.com	

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Name	Affiliation	Address	Phone Number	Email	Would you like to be on the mailing list to receive project updates?
ANDY SILVA	SBCOUNTY	385 N. ARROWHEAD AVE 5TH FLOOR SAN BERNARDINO 92415	909 387-4361	ASILVA@SBCOUNTY.GOV	YES

①

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Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

Name: Paul (Tony) Malone

(Additional information optional)

Affiliation: VVC & MAC & MOAQMD

Mailing Address: 36140 Olive St

City, State, Zip: Lucerne Valley CA, 92356

Phone: (760) 248-6592

Email: TONY MALONE 48 @ Hotmail . Com

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask used in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

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Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

Name: LARRY MAYER

(Additional information optional)

Affiliation: —

Mailing Address: PO Box 1083

City, State, Zip: LUCERNE VALLEY CA 92356

Phone: 760 2486549

Email: LARRYMAYER@HOTMAIL.COM

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask used in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

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SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

Name: JEFF ARONOLD
(Additional information optional)
Affiliation: CONSERENEC RESIDENT
Mailing Address: PO BOX 1902
City, State, Zip: LV CA 92356
Phone: 760 885-2639
Email:

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask used in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

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Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

Name: HARRY BAKER
(Additional information optional)
Affiliation: CA4WDC / PFJV
Mailing Address: 5004 ENFIELD AVE
City, State, Zip: ENCINO CAL 91316
Phone: 818-705-3930
Email: BAKERHAB@AOL.COM

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask used in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

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SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

Name: GLEN DAVIDSON
(Additional information optional)
Affiliation: RES
Mailing Address: 9153 OX BOW
City, State, Zip: LV
Phone: 248-~~7A~~1933
Email: KG44GLEN@SBCGLOBAL.NET

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6

Bureau of Land Management

Public Scoping Meeting
Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

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Email: PessaRU @ NetZero. NeT

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7

Bureau of Land Management

Public Scoping Meeting
Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

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8

Bureau of Land Management

Public Scoping Meeting
Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

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Affiliation: DEFENDERS of WILDLIFE
Mailing Address:
City, State, Zip:
Phone:
Email:

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9

Bureau of Land Management

Public Scoping Meeting
Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

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10

Bureau of Land Management

Public Scoping Meeting
Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

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Affiliation: None

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Phone: 760-2489657

Email:

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11

Bureau of Land Management

Public Scoping Meeting
Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

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(Additional information optional)

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12

Bureau of Land Management

Public Scoping Meeting
Lucerne Valley Solar Project EIS

SPEAKER CARD

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(Additional information optional)

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Email: sallwildlands@gmail.com

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask used in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

13

Bureau of Land Management

Public Scoping Meeting
Lucerne Valley Solar Project EIS

SPEAKER CARD

CONTACT INFORMATION – *please print legibly*

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Appendix I
Newspaper Articles

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LUCERNE VALLEY
THE LEADER
LucerneValleyLeader.com

Chevron says L.V. solar project to begin construction this year

Second project slated for California, Nevada border near Primm

By JESSICA CEJNAR, Staff Writer

The Bureau of Land Management, Southern California Edison and Chevron are seeking public comment on two solar-related projects at either end of the High Desert.

In Lucerne Valley, Chevron Energy Solutions plans to construct a 45-megawatt solar project using photovoltaic panels.

At the other end of the desert, Southern California Edison plans to build a new substation in the Ivanpah Valley and connect it to another substation on the Nevada side using 35 miles of upgraded transmission lines. The project will support the solar energy project proposals in the Ivanpah area including the Ivanpah Solar Electric Generating System, a 400-megawatt project that will be located about three miles from the stateline.

Jerry Silva, SCE project manager for renewable projects, said with the number of projects being developed for the Ivanpah area — about 1,400 megawatts in capacity — it was necessary to build a new substation and upgrade the existing transmission lines. The transmission lines will connect the Ivanpah projects to SCE's Eldorado substation near Boulder City, Nev.

SCE filed its project application with the Bureau of Land Management and the California Public Utilities Commission on May 28, Silva said. The project is expected to be operational and complete in 2013.

Rather than being used to benefit specific homes in the Mojave Desert, the power generated from the proposed solar projects at Ivanpah will be returned to the California power grid that serves the entire state, SCE spokesman Paul Klein said. This project is part of SCE's $20 billion capital improvement plan to build new transmission lines on the existing California power grid over the next five years, he said.

Juliet Don, manager of media and public relations for Chevron Energy Solutions, said Chevron is still at the beginning stages of its project. According to a press release issued Tuesday by the BLM, construction is expected to begin Dec. 1, 2010. The project will be located about eight miles east of Lucerne Valley. The project will consist of the construction of two phases, one capable of generating 20 megawatts of electricity and the other capable of generating 25 megawatts. A switchyard, control and maintenance building and a parking area will also be constructed.

Chevron and BLM representatives will hear from the public at the Lucerne Valley Community Center in Lucerne from 6:30 to 8:30 p.m. July 29. Another public meeting will be held at the Family Life Public Enterprise Center in San Bernardino July 30 from 6:30 to 8:30 p.m. Questions and comments can be e-mailed to LucerneSolar@blm.gov.

Public meetings for the Southern California Edison project will be at Primm Valley Golf Course near Primm, Nev. from 4 to 7 p.m. July 28, and at the South Point Hotel Casino and Spa in Las Vegas from 6 to 9 p.m. on July 29. Representatives from the California Public Utilities Commission will be at both meetings. More information can be found at www.cpuc.ca.gov/ivanpah.html. The public can comment by e-mailing caeit@blm.gov

The public comment period for both projects is 30 days, but David Briery, BLM spokesman for the California Desert District said the public will be able to comment after each project phase is completed.

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Solar energy proposal in Lucerne Valley opposed

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10:00 PM PDT on Thursday, July 30, 2009

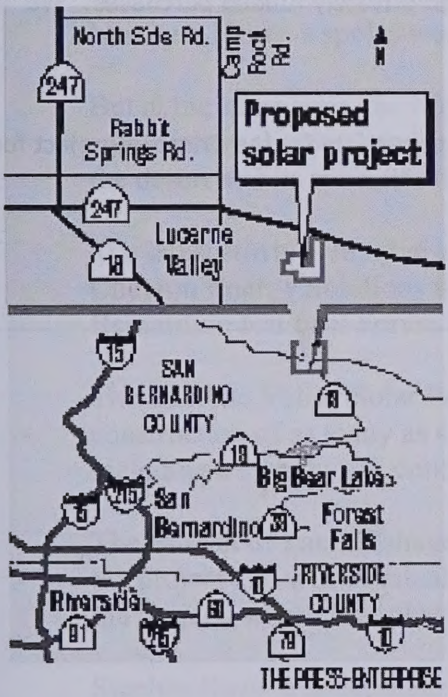
By DAVID DANELSKI
The Press-Enterprise

Outside a Lucerne Valley elementary school auditorium, local resident Chuck Bell pointed to the vast desert to the north and explained that much of it is played-out farmland that would be ideal for solar energy development.

Water is no longer available for farming there because water tables have dropped or farmers have sold water rights, said Bell, a former San Bernardino County official who is now secretary of a Lucerne Valley economic development group.

"It's all disturbed (from farming)," Bell said Wednesday evening. "It's got infrastructure. It's near roads and power lines. ... And it can't be used for anything else."

Story continues below



Inside the auditorium, an official with Chevron Energy Solutions, a subsidiary of the Chevron USA oil company, described plans to blanket 516 acres of undisturbed public land with photovoltaic panels that would generate enough solar electricity for 20,000 homes. The property is north of the San Bernardino Mountains, about eight miles east of the school.

Greg Thomsen, a U.S. Bureau of Land Management program manager, explained to an audience of about 60 people -- mostly desert residents -- that the bureau is committed to sustainable energy development on public land, subject to proper environmental review.

Last month, U.S. Interior Secretary Ken Salazar announced that the government would streamline the application process for alternative-energy projects on federal lands in the West to meet new demands for clean power.

The Chevron official, Ralph Hollenbacher, a senior technical service manager based in San Francisco, said it's more expedient for Chevron to develop solar energy on public land because the company can do "one-stop shopping" with the BLM to get access to large amounts of land and get environmental reviews completed.

Buying private land would require dealing with multiple landowners and still require environmental reviews, Hollenbacher said after the meeting. The cost of acquiring private land isn't a factor, he said.

Chevron's Lucerne Valley proposal is one of 159 wind and solar projects proposed on California public land managed by the BLM, a division of the U.S. Department of Interior under Salazar's leadership.

Some people at the meeting said they were concerned about the cumulative effect of a rush to develop energy on undisturbed land that is home to threatened desert tortoises and other wildlife.

Several also agreed with Bell, secretary of Lucerne Valley Economic Development Associates, saying the energy developments should be built on former farms and other private land that has less value as wildlife habitat.

"It's a land rush for renewable energy," said Gary Hatfield of Mountain Home Village, a small community east of Redlands. "Are we going to trade our public resources, places used by animals, for questionable energy technologies that 20 years from now may be obsolete?"

There isn't an endless supply of untouched habitat, one speaker said.

"Mother Nature is not making more pristine lands," said April Sall, a preserve manager for The Wildlands Conservancy, an Oak Glen-based group that protects open spaces through privately funded purchases. "We have to be careful with what we have."

No one in the audience voiced clear support of the project.

The evening meeting at Lucerne Valley Elementary School sought public comments for the Chevron project for preparation of an environmental study expected to be released later this year.

Reach David Danelski at 951-368-9471 or ddanelski@PE.com

RENEWABLE ENERGY: With clock ticking on stimulus, solar developers double down on Mojave (07/30/2009)

Environmentalists are growing increasingly concerned that energy companies are rushing solar-power projects in California's Mojave Desert to qualify for federal economic stimulus money.

The $787 billion American Recovery and Reinvestment Act, signed by President Obama in February, contains billions of dollars in federal grants that could pay up to 30 percent of the cost to build a solar array, wind farm or geothermal power plant.

But to qualify for the grants, project applicants must have completed their environmental reviews, have obtained federal and state permits and have their projects "shovel ready" by December 2010, federal regulators and industry officials say.

That is a big factor behind a recent surge in proposed solar-power projects in the Mojave Desert, which government and industry officials describe as the nation's best region for large-scale solar development.

"It's because of the number of sunny days, dry clear air, and the intensity of the sun," said Monique Hanis, a spokeswoman for the Solar Energy Industries Association.

But at the same time, the Mojave region is drawing increased attention from environmental groups and sympathetic lawmakers who are stepping up efforts to protect the desert and its species before a glut of solar projects moves forward.

The latest stirrings involve a 45-megawatt photovoltaic solar power plant proposed by Chevron Energy Solutions for San Bernardino County, Calif., just north of San Bernardino National Forest.

The Lucerne Valley Solar Project would occupy 516 acres of desert land and involve the construction of as many as 400,000 photovoltaic panels and associated infrastructure, including a switchyard, control and maintenance building, and parking area.

The Bureau of Land Management this week initiated a first round of public comment on the project and will eventually complete a full environmental impact statement (EIS) for the project, whose first phase is scheduled to begin construction in December 2010.

Stephen Razo, a spokesman for BLM's California Desert District, said a draft EIS could be ready by the end of the year. "Our challenge is to ensure that the renewable energy development is compatible with our multiple-use guidance," Razo said.

Juliet Don, a spokeswoman for San Francisco-based Chevron Energy Solutions, said the company is confident the project will sail through the public scoping and permitting process. "We wouldn't propose a project where we don't think we'd be able to ... get it approved," she said.

But environmental groups are girding for a fight, citing the project's likely effects on the federally endangered desert tortoise and other sensitive species.

"It's definitely within desert tortoise habitat out there, so there could be some conflicts," said Ileene Anderson, a staff biologist for the Center for Biological Diversity in Los Angeles. "It's another nice piece of habitat that today supports rare species but that soon might no longer be available to do that."

Lawmakers, too, have stepped into the fray, with proposals that would impose greater environmental safeguards on certain lands. Sen. Dianne Feinstein (D-Calif.), for example, has advocated legislation setting aside more than 600,000 acres of California desert habitat from solar-energy developers.

A measured approach

The debate over the Lucerne Valley project and others like it underscores just how difficult it is to find sites for commercial-scale renewable energy plants in the United States, where the Obama administration's green energy priorities are increasingly clashing with public lands protection objectives.

BLM is currently considering 66 solar project applications within the agency's California Desert District, which covers the sensitive Mojave region. If all were built, the projects would cover more than 554,000 acres and have a capacity to produce more than 46,000 megawatts of electricity -- enough to power roughly 35 million homes.

While Interior Secretary Ken Salazar has said that he wants federal land to be "an engine for the clean-energy economy," large wind farms, solar arrays and other renewable energy projects are drawing greater scrutiny from environmental groups due to their large footprints and hefty natural resource requirements. Some projects are almost certain to be held up by administrative appeals and lawsuits involving the Endangered Species Act, the Clean Water Act and the National Environmental Policy Act.

In this way, renewable projects may fare no better than the dozens of coal-fired power plants that have been challenged by environmentalists over the past decade, when the Bush administration advocated a significant expansion of fossil-based energy, including coal- and gas-fired generation. Most of the coal plant challenges involved concerns about air pollution, including emissions of carbon dioxide, the world's most abundant greenhouse gas.

The Obama team, while attempting to undo the Bush policies and set the nation on a course to reduced greenhouse gas emissions, now finds itself in a delicate position with environmental activists who strongly supported candidate Obama during last year's campaign and have remained mostly supportive over the president's first six months in office.

While most of the country's mainstream environmental groups support clean, renewable energy, they want it done sensibly and within certain land-use boundaries.

In a move toward careful environmental planning, Salazar last month designated more than 676,000 acres of public land in six Western states as "solar energy study areas" for the purpose of identifying lands that are best suited for solar-power projects (*Land Letter*, July 9). If fully developed, the solar energy zones could support as much as 100,000 megawatts of new generation -- enough to power hundreds of millions of homes, officials have said.

Beat the clock

Environmentalists hailed the study zone concept, saying it would help keep energy projects from destroying sensitive landscapes and wildlife habitat. But with deadlines looming for developers to qualify for stimulus money, many prospective projects are not waiting for the solar zone studies to be completed.

The proposed Lucerne Valley project, for example, lies outside the 351,049 acres that Salazar designated as solar study zones in California, said Razo, the BLM spokesman.

That worries advocacy groups, who say the Lucerne project and others like it should be reconfigured so its footprint falls within a part of the Mojave Desert deemed suitable for energy development.

"We've done enough preliminary analysis with some other environmental groups to know there are a number of potentially suitable locations [for solar power] in the California desert," said Jeff Aardahl, a biologist and California representative for Defenders of Wildlife in Sacramento.

Aardahl said his group wants to see the federal government giving priority to placing the solar-power projects on already disturbed land.

Unfortunately, he said, that is not being done.

"Many of the proposed projects we are seeing, at least in our minds, are located to a very large extent on undisturbed desert habitat that would be permanently converted into an industrial site," he said.

But Hanis, the solar industry group spokeswoman, said the siting and permitting activity triggered by the stimulus bill is working just the way it is supposed to by freeing up capital investment and spurring developers to seek out the most economically advantageous sites for new solar projects.

"With all these incentives, it becomes more interesting for the investors," Hanis said. "It's more of an incentive for investors to get into these kinds of projects rather than others."

Scott Streater is a freelance journalist based in Colorado Springs, Colo.

Appendix B
Emission Calculations for Construction Activities and Operation and Maintenance Activities

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Appendix B
Emission Calculations for Construction Activities
Lucerne Valley Solar Project

Table No.	Table Description
Table B1-a	Total Construction Emissions - Phase I
Table B1-b	Total Construction Emissions - Phase II
Table B2-a	Summary of Daily Construction Emissions - Phase I
Table B2-b	Summary of Daily Construction Emissions - Phase II
Table 3	Non-Road Diesel Equipment Exhaust Emission Factors
Table 4-A	Total Emissions for Diesel Non-Road Equipment - Phase I
Table 4-B	Total Emissions for Diesel Non-Road Equipment - Phase II
Table 5-A	Daily Emissions for Diesel Non-Road Equipment - Phase I
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Table 6	On-Road Vehicle Usage Phases I and II
Table 7	On-Road Vehicle Exhaust Emission Factors
Table 8-A	Total and Daily Exhaust Emissions for On Road Vehicles - Phase I
Table 8-B	Total and Daily Exhaust Emissions for On Road Vehicles - Phase II
Table 9-A	Fugitve Dust Emissions - Construction Site - Phase I
Table 9-B	Fugitve Dust Emissions - Construction Site - Phase II
Table 10	Fugitive Dust Emission Factors - Roads
Table 11-A	Fugitive Dust Emissions from Road (Site and Off-Site) - Phase I
Table 11-B	Fugitive Dust Emissions from Road (Site and Off-Site) - Phase II

Table B1-a
Total Construction Emissions - Phase I
Lucerne Valley Solar Project

Emission Type	Source	Emissions (tons)						GHG Emissions (metric tons)
		ROG	CO	NO$_x$	SO$_2$	PM$_{10}$	PM$_{2.5}$	CO$_2$e
Exhaust Emissions	Non Road Equipment	0.57	2.29	4.90	0.01	0.25	0.25	537
	On Road Vehicles	0.09	0.36	1.17	0.00	0.06	0.05	117
Fugitive Dust Emissions	Construction Activities	-	-	-	-	0.54	0.08	-
	Roads (Site and Off-Site)	-	-	-	-	5.80	0.64	-
Subtotal		**0.66**	**2.65**	**6.06**	**0.01**	**6.64**	**1.02**	**653**

Estimation for the first year (125 days of operations)

Emission Type	Source	Emissions (tons/year)					
		ROG	CO	NO$_x$	SO$_2$	PM$_{10}$	PM$_{2.5}$
Exhaust Emissions	Heavy Duty Diesel Truck	0.01	0.04	0.14	0.00	0.01	0.01
	ATVs	0.05	1.14	0.01	0.00	0.00	0.00
Fugitive Dust Emissions	Roads	-	-	-	-	1.31	0.13
Subtotal Operational Emissions First Year		**0.06**	**1.19**	**0.15**	**0.00**	**1.31**	**0.14**

Estimation for the first year (240 days of construction / 125 days of operations)	Emissions (tons/year)					
	ROG	CO	NO$_x$	SO$_2$	PM$_{10}$	PM$_{2.5}$
	0.72	3.84	6.22	0.01	7.96	1.16

Table B1-b
Total Construction Emissions - Phase II
Lucerne Valley Solar Project

Emission Type	Source	Emissions (tons)						GHG Emissions (metric tons)
		ROG	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$	CO_2e
Exhaust Emissions	Non Road Equipment	0.57	2.29	4.90	0.01	0.25	0.25	537
	On Road Vehicles	0.09	0.36	1.17	0.001	0.06	0.05	117
Fugitive Dust Emissions	Construction Activities	-	-	-	-	0.74	0.08	-
	Roads (Site and Off-Site)	-	-	-	-	5.80	0.10	-
Subtotal		**0.66**	**2.65**	**6.06**	**0.01**	**6.84**	**0.48**	**653**

Estimation for the first year (125 days of operations)							
		Emissions					
		(tons/year)					
Emission Type	Source	ROG	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Exhaust Emissions	Heavy Duty Diesel Truck	0.01	0.04	0.14	0.0002	0.01	0.01
	ATVs	0.05	1.14	0.01	0.001	0.002	0.002
Fugitive Dust Emissions	Roads	-	-	-	-	1.31	0.13
Subtotal first yeat of operations		0.06	1.19	0.15	0.001	1.31	0.14

0.72 3.84 6.22 0.01 8.15 0.62

Table B2-a
Summary of Daily Construction Emissions - Phase I
Lucerne Valley Solar Project

Emission Type	Source	Emissions (lbs/day)							
		ROG	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4
Exhaust Emissions	Non Road Equipment	7.8	30.2	63.0	0.1	3.5	3.5	6,886	0.7
	On Road Vehicles	0.8	3.0	9.7	0.01	0.5	0.4	1,070	0.04
Fugitive Dust Emissions	Construction Activities	-	-	-	-	43	6	-	-
	Roads (Site and Off-Site)	-	-	-	-	48	5	-	-
Subtotal		**9**	**33**	**73**	**0.1**	**95**	**15**	**7,957**	**1**

Table B2-b

Summary of Daily Construction Emissions - Phase II

Lucerne Valley Solar Project

Emission Type	Source	Emissions (lbs/day)							
		ROG	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4
Exhaust Emissions	Non Road Equipment	7.8	30.2	63.0	0.1	3.5	3.5	6,886	0.7
	On Road Vehicles	0.8	3.0	9.7	0.01	0.5	0.4	1,070	0.04
Fugitive Dust Emissions	Construction Activities	-	-	-	-	58	8	-	-
	Roads (Site and Off-Site)	-	-	-	-	48	5	-	-
Subtotal		**9**	**33**	**73**	**0.1**	**110**	**17**	**7,957**	**1**

Table B3
Non-Road Diesel Equipment Exhaust Emission Factors
Lucerne Valley Solar Project

Equipment	Maximum Operating Range (hp)	Composite Emission Factor (lb/hr)						
		ROG	CO	NO_x	SO_2	PM	CO_2	CH_4
Vibratory Post Driver / Drill Rig	Composite	0.1052	0.5146	1.1331	0.0017	0.0498	165	0.0095
Crawler Tractors	Composite	0.1861	0.6409	1.3854	0.0013	0.0854	114	0.0168
Excavators	Composite	0.1483	0.5581	1.1502	0.0013	0.0638	120	0.0134
Forklifts	Composite	0.0686	0.2319	0.5161	0.0006	0.0281	54.4	0.0062
Generator Set	15	0.0172	0.0726	0.1154	0.0002	0.0069	10.2	0.0016
Graders	Composite	0.1723	0.6314	1.4338	0.0015	0.0753	133	0.0155
Rollers	Composite	0.1176	0.4212	0.7749	0.0008	0.0547	67.1	0.0106
Scrapers	Composite	0.3202	1.2424	2.9078	0.0027	0.1256	262	0.0289
Tractors/Loaders/Backhoes	Composite	0.1021	0.3930	0.6747	0.0008	0.0521	66.8	0.0092
Plate Compactor	Composite	0.0050	0.0263	0.0317	0.0001	0.0015	4.3	0.0005

Source: South Coast Air Quality Management District (SCAQMD). 2008. Off-road Mobile Source Emission Factors (Scenario Years 2007 – 2025).

Notes:

Composite emission factors have horsepower rating and load factors already built into the emission factors. SCAQMD recommends using composite factors if the CEQA practitioner does not know these two parameters when calculating off-road mobile source emissions

Table 4-A

Total Emissions for Diesel Non-Road Equipment - Phase I

Lucerne Valley Solar Project

Construction Phase	Equipment Type	Equipment Engine Size (hp) [a]	Fuel Type	Total Hourly Usage for All Units (hrs)	Criteria PollutantsTotal Emissions (tons)					GHG Total Emissions (metric tons)		
					ROG	CO	NO_x	SO_2	PM	CO_2	CH_4	CO_2e
All Construction Activities	Vibratory Post Driver	100-175	Diesel	4,050	0.213	1.042	2.295	0.004	0.101	302.8	0.0	303.2
	Crawler Tractors/Dozer	100-175	Diesel	500	0.047	0.160	0.346	0.000	0.021	25.9	0.0	25.9
	Excavators	175-300	Diesel	200	0.015	0.056	0.115	0.000	0.006	10.8	0.0	10.9
	Forklifts/Aerial Lifts/ Booms	50-100	Diesel	6,000	0.206	0.696	1.548	0.002	0.084	148.0	0.0	148.4
	Generator/Compressor	5-15	Diesel	4,000	0.034	0.145	0.231	0.000	0.014	18.5	0.0	18.6
	Graders	175-300	Diesel	80	0.007	0.025	0.057	0.000	0.003	4.8	0.0	4.8
	Rollers/Compactors	100-175	Diesel	500	0.029	0.105	0.194	0.000	0.014	15.2	0.0	15.3
	Scrapers	175-300	Diesel	40	0.006	0.025	0.058	0.000	0.003	4.8	0.0	4.8
	Tractors/Loaders/Backhoes	100-175	Diesel	160	0.008	0.031	0.054	0.000	0.004	4.8	0.0	4.9
	Vibratory Plate (hand held)	10 -- 15	Diesel	40	0.000	0.001	0.001	0.000	0.000	0.1	0.0	0.1
	TOTAL				**0.566**	**2.286**	**4.899**	**0.006**	**0.250**	**536**	**0.046**	**537**

Notes:

(a) Composite emission factors recommended by the South Coast Air Management District were used per equipment, except for Generator/Compressor (maximum hp 15).

Table 4-B
Total Emissions for Diesel Non-Road Equipment - Phase II
Lucerne Valley Solar Project

Construction Phase	Equipment Type	Equipment Engine Size (hp) [a]	Fuel Type	Total Hourly Usage for All Units (hrs)	Criteria PollutantsTotal Emissions (tons)					GHG Total Emissions (metric tons)		
					ROG	CO	NO_x	SO_2	PM	CO_2	CH_4	CO_2e
All Construction Activities	Vibratory Post Driver	100-175	Diesel	4,050	0.213	1.042	2.295	0.004	0.101	303	0.0	303
	Crawler Tractors/Dozer	100-175	Diesel	500	0.047	0.160	0.346	0.000	0.021	26	0.0	26
	Excavators	175-300	Diesel	200	0.015	0.056	0.115	0.000	0.006	11	0.0	11
	Forklifts/Aerial Lifts/ Booms	50-100	Diesel	6,000	0.206	0.696	1.548	0.002	0.084	148	0.0	148
	Generator/Compressor	5 -- 15	Diesel	4,000	0.034	0.145	0.231	0.000	0.014	19	0.0	19
	Graders	175-300	Diesel	80	0.007	0.025	0.057	0.000	0.003	5	0.0	5
	Rollers/Compactors	100-175	Diesel	500	0.029	0.105	0.194	0.000	0.014	15	0.0	15
	Scrapers	175-300	Diesel	40	0.006	0.025	0.058	0.000	0.003	5	0.0	5
	Tractors/Loaders/Backhoes	100-175	Diesel	160	0.008	0.031	0.054	0.000	0.004	5	0.0	5
	Vibratory Plate (hand held)	10-15	Diesel	40	0.000	0.001	0.001	0.000	0.000	0	0.0	0
	TOTAL				**0.57**	**2.29**	**4.90**	**0.01**	**0.25**	**536**	**0.046**	**537**

Notes:

(a) Composite emission factors recommended by the South Coast Air Management District were used per equipment, except for Generator/Compressor (maximum hp 15).

Table 5-A
Daily Emissions for Diesel Non-Road Equipment - Phase I
Lucerne Valley Solar Project

Construction Phase	Equipment Type	Equipment Engine Size (hp)[a]	Fuel Type	Total Hourly Usage for All Units (hrs)	Estimated daily usage[b] (hrs/day)	Criteria PollutantsTotal Emissions (lbs/day)					GHG Total Emissions (lbs/day)	
						ROG	CO	NO_x	SO_2	PM	CO_2	CH_4
All Construction Activities	Vibratory Post Driver	100-175	Diesel	4,050	17	1.776	8.684	19.122	0.029	0.841	2782	0.160
	Crawler Tractors/Dozer	100-175	Diesel	500	2	0.388	1.335	2.886	0.003	0.178	238	0.035
	Excavators	175-300	Diesel	200	1	0.124	0.465	0.958	0.001	0.053	100	0.011
	Forklifts/Aerial Lifts/ Booms	50-100	Diesel	6,000	25	1.714	5.798	12.902	0.015	0.702	1360	0.155
	Generator/Compressor	5 -- 15	Diesel	4,000	17	0.287	1.209	1.923	0.003	0.115	170	0.026
	Graders	175-300	Diesel	80	3	0.551	2.020	4.588	0.005	0.241	425	0.050
	Rollers/Compactors	100-175	Diesel	500	20	2.353	8.424	15.497	0.015	1.094	1341	0.212
	Scrapers	175-300	Diesel	40	2	0.512	1.988	4.653	0.004	0.201	420	0.046
	Tractors/Loaders/Backhoes	100-175	Diesel	160	1	0.068	0.262	0.450	0.001	0.035	45	0.006
	Vibratory Plate (hand held)	10 -- 15	Diesel	40	2	0.008	0.042	0.051	0.000	0.002	7	0.001
	TOTAL					**7.8**	**30.2**	**63.0**	**0.1**	**3.5**	**6,886**	**0.702**

Notes:
(a) Composite emission factors recommended by the South Coast Air Management District were used per equipment, except for Generator/Compressor (maximum hp 15).
(b) Daily usage is estimated per a composite number of equipment and based on a 240 days of total construction period.
Exception on daily usage assumption includes graders, scrapers, vibratory plates and roller/compactors, since the grading activities are intended to have a 25-day duration.

Table 5-B

Daily Emissions for Diesel Non-Road Equipment - Phase II

Lucerne Valley Solar Project

Construction Phase	Equipment Type	Equipment Engine Size (hp) [a]	Fuel Type	Total Hourly Usage for All Units (hrs)	Estimated daily usage [b] (hrs/day)	Criteria PollutantsTotal Emissions (lbs/day)					GHG Total Emissions (lbs/day)	
						ROG	CO	NO_x	SO_2	PM	CO_2	CH_4
All Construction Activities	Vibratory Post Driver	100-175	Diesel	4,050	17	1.776	8.684	19.122	0.029	0.841	2781.90	0.160
	Crawler Tractors/Dozer	100-175	Diesel	500	2	0.388	1.335	2.886	0.003	0.178	237.54	0.035
	Excavators	175-300	Diesel	200	1	0.124	0.465	0.958	0.001	0.053	99.65	0.011
	Forklifts/Aerial Lifts/ Booms	50-100	Diesel	6,000	25	1.714	5.798	12.902	0.015	0.702	1359.89	0.155
	Generator/Compressor	5-15	Diesel	4,000	17	0.287	1.209	1.923	0.003	0.115	170.13	0.026
	Graders	175-300	Diesel	80	3	0.551	2.020	4.588	0.005	0.241	424.78	0.050
	Rollers/Compactors	100-175	Diesel	500	20	2.353	8.424	15.497	0.015	1.094	1341.05	0.212
	Scrapers	175-300	Diesel	40	2	0.512	1.988	4.653	0.004	0.201	419.998	0.046
	Tractors/Loaders/Backhoes	100-175	Diesel	160	1	0.068	0.262	0.450	0.001	0.035	44.54	0.006
	Vibratory Plate (hand held)	10-15	Diesel	40	2	0.008	0.042	0.051	0.000	0.002	6.902	0.001
	TOTAL					**7.8**	**30.2**	**63.0**	**0.1**	**3.5**	**6,886**	**0.702**

Notes: Construction of Phase II is assumed to have the same duration and equipment/vehicle list as Phase I

(a) Composite emission factors recommended by the South Coast Air Management District were used per equipment, except for Generator/Compressor (maximum hp 15).

(b) Daily usage is estimated per a composite number of equipment and based on a 240 days of total construction period, except for gradind equipment (25 days).

Exception on daily usage assumption includes graders, scrapers, vibratory plates and roller/compactors.

Table 6

On-Road Vehicle Usage Phases I and II

Lucerne Valley Solar Project

Per

Phase I

Vehicle Type	Construction Phase	Vehicle Description	Vehicle Class	Total Working Hours	Total Working Days	Working hours per day	Estimated speed (mph)	Total Daily VMT All Units (VMT/day)			Total Overall VMT of All Units (VMT)		
								Unpaved Roads	Paved Roads	TOTAL	Unpaved Roads	Paved Roads	TOTAL
Heavy Duty Diesel Truck	All	Dump Truck	HDDV6	120	240	0.5	25	2.5	10	13	600	2,400	3,000
		Concrete Truck	HDDV6	120	240	0.5	25	2.5	10	13	600	2,400	3,000
		Tender Truck	HDDV6	120	240	0.5	25	2.5	10	13	600	2,400	3,000
		Highway Tractor	HDDV6	80	240	0.3	25	1.7	7	8	400	1,600	2,000
		Flatbed Truck	HDDV3	1000	240	4.2	25	20.8	83	104	5,000	20,000	25,000
		Water Truck	HDDV6	1000	240	4.2	25	20.8	83	104	5,000	20,000	25,000
	Subtotal	-		-	-	-	-	**51**	**203**	**254**	**12,200**	**48,800**	**61,000**

Phase II

Vehicle Type	Construction Phase	Vehicle Description	Vehicle Class	Total Working Hours	Total Working Days	Working hours per day	Estimated speed (mph)	Total Daily VMT All Units (VMT/day)			Total Overall VMT of All Units (VMT)		
								Unpaved Roads	Paved Roads	TOTAL	Unpaved Roads	Paved Roads	TOTAL
Heavy Duty Diesel Truck	All	Dump Truck	HDDV6	120	240	0.5	25	2.5	10	13	600	2,400	3,000
		Concrete Truck	HDDV6	120	240	0.5	25	2.5	10	13	600	2,400	3,000
		Tender Truck	HDDV6	120	240	0.5	25	2.5	10	13	600	2,400	3,000
		Highway Tractor	HDDV6	80	240	0.3	25	1.7	7	8	400	1,600	2,000
		Flatbed Truck	HDDV3	1000	240	4.2	25	20.8	83	104	5,000	20,000	25,000
		Water Truck	HDDV6	1000	240	4.2	25	20.8	83	104	5,000	20,000	25,000
	Subtotal	-		-	-	-	-	**51**	**203**	**254**	**12,200**	**48,800**	**61,000**

Notes: Construction of Phase II is assumed to have the same duration and equipment/vehicle list as Phase I

Table 7
On-Road Vehicle Exhaust Emission Factors
Lucerne Valley Solar Project

Equipment Type	Emission Factor[a] (pounds/VMT)							
	ROG	CO	NOx	SOx	PM10	PM2.5	CO2	CH_4
Heavy Duty Diesel Trucks	0.003042	0.011955	0.038221	0.000041	0.001831	0.001601	4.211206	0.000142
Light Duty Trucks	0.002590	0.01844	0.02062	0.0000270	0.0007512	0.0006243	2.732	0.0001258
Gasoline Passenger Vehicles	0.0009140	0.00826	0.0009181	0.00001077	0.00008698	0.00005478	1.096	0.00008146
ATVs	0.0046270	0.10146	0.0009048	0.00010582	0.00014550	0.00014550	0.517	0.00000000

Notes:

a. Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks. SCAQMD (Scenario Year: 2010).

Table 8-A
Total and Daily Exhaust Emissions for On Road Vehicles - Phase I
Lucerne Valley Solar Project

Total Emissions

Vehicle Type	Total Overall Miles Travelled (VMT)	Total Emissions (tons)						Total Emissions (metric tons)	
		ROG	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4
Heavy Duty Diesel Trucks	61,000	0.09	0.36	1.17	0.00	0.06	0.05	117	0
Total	**-**	**0.09**	**0.36**	**1.17**	**0.00**	**0.06**	**0.05**	**117**	**0**

Daily Emissions

Vehicle Type	Total Overall Miles Travelled (VMT)	Total Emissions (lbs/day)							
		ROG	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4
Heavy Duty Diesel Trucks	61,000	1	3	10	0.01	0.5	0.4	1070	0.04
Total	**-**	**1**	**3**	**10**	**0.01**	**0.5**	**0.4**	**1070**	**0.04**

Table 8-B
Total and Daily Exhaust Emissions for On Road Vehicles - Phase II
Lucerne Valley Solar Project

Total Emissions

Vehicle Type	Total Overall Miles Travelled (VMT)	Total Emissions (tons)						Total Emissions (metric tons)	
		ROG	CO	NO$_x$	SO$_2$	PM$_{10}$	PM$_{2.5}$	CO$_2$	CH$_4$
Heavy Duty Diesel Trucks	61,000	0.09	0.36	1.17	0.00	0.06	0.05	117	0
Total	**-**	**0.09**	**0.36**	**1.17**	**0.00**	**0.06**	**0.05**	**117**	**0**

Daily Emissions

Vehicle Type	Total Overall Miles Travelled (VMT)	Total Emissions (lbs/day)							
		ROG	CO	NO$_x$	SO$_2$	PM$_{10}$	PM$_{2.5}$	CO$_2$	CH$_4$
Heavy Duty Diesel Trucks	61,000	1	3	10	0	0	0	1070	0
Total	**-**	**1**	**3**	**10**	**0**	**0**	**0**	**1070**	**0**

Notes: Construction of Phase II is assumed to have the same duration and equipment/vehicle list as Phase I

Table 9-A
Fugitve Dust Emissions - Construction Site - Phase I

Construction Activity	Average Daily Disturbance (acres)	Duration of Activity (months)	Emission Factor[a] (ton/acre/month)		Emissions (tons)		Daily Emissions (lbs/day)	
			PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Site Clearing and Grading	7.2	0.83	0.090	0.0126	0.54	0.08	43	6
Access Roads	1.4	0.17	0.090	0.0126	0.02	0.00	8.4	1.2
Switchyard	0.0006	0.17	0.090	0.0126	0.00	0.00	0.0	0.0
Underground Power Line	0.1667	1	0.090	0.0126	0.02	0.00	1.0	0.1
Control/Maintenance Building	0.0001	4	0.090	0.0126	0.00	0.00	0.00	0.00
Parking / Laydown Area	0.1	0.17	0.090	0.0126	0.00	0.00	0.00	0.00
Total	-	-	-	-	**0.58**	**0.08**	**53**	**7**

Notes:

a. See emission factor derivation table below.

b. Total site area for Phase I: 516 acres. Total duration of grading: 25 days.

Emission Factor Derivation Table

Parameter	**Units**	**TSP[1]**	**PM_{10}(2)**	**$PM_{2.5}$(3)**
Uncontrolled Emission Factor[1] (based on 30 days/month)	ton/acre/month	0.2	0.15	0.021
Controlled Emission Factor[5] (based on 24 days/month)	ton/acre/month	0.12	0.090	0.0126

Notes:

1. Emission factor from AP-42 Section 13.2.3 for TSP.
2. PM_{10} emission factor calculated by multiplying TSP emission factor by 0.75 (AP-42 Section 11.9, Table 11.9-1)
3. $PM_{2.5}$ emission factor calculated by multiplying TSP emission factor by 0.105 (AP-42 Section 11.9, Table 11.9-1)
4. Calculated by multiplying 30-day emission factor by 0.8 (24 days/ 30 days).
4. Assume dust 40% duct control factor based on as-needed watering. Does not include any control for winter conditions.

Table 9-B
Fugitve Dust Emissions - Construction Site - Phase II

Construction Activity	Average Daily Disturbance (acres)	Duration of Activity (months)	Emission Factor[a] (ton/acre/month)		Emissions (tons)		Daily Emissions (lbs/day)	
			PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Site Clearing and Grading	9.6	0.83	0.090	0.0126	0.72	0.10	58	8
Switchyard	0.0006	0.17	0.090	0.0126	0.00	0.00	0.0	0.0
Underground Power Line	0.1667	1	0.090	0.0126	0.02	0.00	1.0	0.1
Parking / Laydown Area	0.1	0.17	0.090	0.0126	0.00	0.00	0.00	0.00
Total	-	-	-	-	**0.74**	**0.10**	**59**	**8**

Notes:

a. See emission factor derivation table below.

b. Total solar array area for Phase II: 140 acres (Per POD description). Total duration of grading: 25 days.

Emission Factor Derivation Table

Parameter	Units	TSP[1]	PM_{10}(2)	$PM_{2.5}$(3)
Uncontrolled Emission Factor[1] (based on 30 days/month)	ton/acre/month	0.2	0.15	0.021
Controlled Emission Factor[5] (based on 24 days/month)	ton/acre/month	0.12	0.090	0.0126

Notes:

1. Emission factor from AP-42 Section 13.2.3 for TSP.
2. PM_{10} emission factor calculated by multiplying TSP emission factor by 0.75 (AP-42 Section 11.9, Table 11.9-1)
3. $PM_{2.5}$ emission factor calculated by multiplying TSP emission factor by 0.105 (AP-42 Section 11.9, Table 11.9-1)
4. Calculated by multiplying 30-day emission factor by 0.8 (24 days/ 30 days).
4. Assume dust 40% duct control factor based on as-needed watering. Does not include any control for winter conditions (frozen ground)

Table 10
Fugitive Dust Emission Factors - Roads

Unpaved Roads - Emission Factor Derivation

$E = k(s/12)^a(W/3)^b$ AP-42 Section 13.2.2 (11/06 version)

where:

E = particulate emission factor (lb/VMT)
k, a, b = empirical constants for industrial roads
s = surface material silt content (%)
W = average vehicle weight (tons)

Parameter	**Units**	**PM_{10}**	**$PM_{2.5}$**	**Reference**
Mean Vehicle Weight	**tons**	12	12	Assumption
Constant, k	lb/VMT	1.5	0.15	Table 13.2.2-2 (worst case)
Constant, a		0.9	0.9	Table 13.2.2-2 (worst case)
Constant, b		0.45	0.45	Table 13.2.2-2 (worst case)
Silt content, s	%	8.5	8.5	Table 13.2..2-1 (construction sites)
Uncontrolled Emission factor, E	**lb/VMT**	**2.05**	**0.205**	**Calculation**
Control Efficiency for Watering	%	0.65	0.65	Assumption
Controlled Emission factor, E	**lb/VMT**	**0.72**	**0.072**	**Calculation**

Paved Roads - Emission Factor Derivation Table

$E = (k(sL/2)^{0.65}(W/3)^{1.5}-C)$ AP-42 Section 13.2.1 (11/06 version)

where:

E = particulate emission factor (lb/VMT)
k = particle size multiplier
sL = road surface silt loading (g/m^2)
W = average vehicle weight (tons)
C = emission factor for 1980's vehicle fleet exhaust, break wear and tire wear

Parameter	**Units**	**PM_{10}**	**$PM_{2.5}$**	**Reference**
Mean Vehicle Weight	tons	12	12	Assumption
k factor	lb/VMT	0.016	0.0024	Table 13.2-1.1
Silt Loading, sL	g/m^2	0.6	0.6	Table 13.2.1-3
Emission factor, C	lb/VMT	0.00047	0.00036	Table 13.2.1-2
Uncontrolled Emission factor, E	**lb/VMT**	**0.05805**	**0.008419**	**Calculation**

Table 11-A

Fugitive Dust Emissions from Road (Site and Off-Site) - Phase I

Total Emissions

	Total Overall VMT (VMT)		Emissions (tons)					
			Unpaved Roads		Paved Roads		All Roads	
Fuel Type	Paved Roads	Unpaved Roads	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Heavy Duty Diesel Trucks	12,200	48,800	4.382	0.438	1.42	0.205	5.80	0.644
Total	-	-	**4.4**	**0.4**	**1.4**	**0.21**	**5.8**	**0.64**

Daily Emissions

	Total Overall VMT (VMT)		Emissions (lbs/day)					
			Unpaved Roads		Paved Roads		All Roads	
Fuel Type	Paved Roads	Unpaved Roads	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Heavy Duty Diesel Trucks	12,200	48,800	36.5	3.7	11.8	1.7	48.3	5.4
Total	-	-	**36.7**	**3.7**	**11.9**	**1.7**	**48.5**	**5.4**

Table 11-B
Fugitive Dust Emissions from Road (Site and Off-Site) - Phase II

Total Emissions

	Total Overall VMT (VMT)		Emissions (tons)					
			Unpaved Roads		Paved Roads		All Roads	
Fuel Type	Paved Roads	Unpaved Roads	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Heavy Duty Diesel Trucks	12,200	48,800	4.382	0.438	1.42	0.205	5.80	0.644
Total	-	-	**4.4**	**0.4**	**1.4**	**0.21**	**5.8**	**0.64**

Daily Emissions

	Total Overall VMT (VMT)		Emissions (lbs/day)					
			Unpaved Roads		Paved Roads		All Roads	
Fuel Type	Paved Roads	Unpaved Roads	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Heavy Duty Diesel Trucks	12,200	48,800	36.5	3.7	11.8	1.7	48.3	5.4
Total	-	-	**36.7**	**3.7**	**11.9**	**1.7**	**48.5**	**5.4**

SCAB Fleet Average Emission Factors (Diesel)

EF-OFFROAD

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Aerial Lifts	15	0.0104	0.0529	0.0662	0.0001	0.0037	8.7	0.0009
	25	0.0210	0.0577	0.1013	0.0001	0.0065	11.0	0.0019
	50	0.0756	0.1937	0.1984	0.0003	0.0189	19.6	0.0068
	120	0.0702	0.2501	0.4502	0.0004	0.0361	38.1	0.0063
	500	0.1506	0.5801	1.9198	0.0021	0.0598	213	0.0136
	750	0.2803	1.0486	3.5605	0.0039	0.1096	385	0.0253
Aerial Lifts Composite		0.0670	0.2093	0.3600	0.0004	0.0248	34.7	0.0060
Air Compressors	15	0.0144	0.0513	0.0838	0.0001	0.0061	7.2	0.0013
	25	0.0325	0.0847	0.1397	0.0002	0.0098	14.4	0.0029
	50	0.1163	0.2813	0.2386	0.0003	0.0265	22.3	0.0105
	120	0.1014	0.3351	0.5977	0.0006	0.0545	47.0	0.0091
	175	0.1274	0.5113	1.0082	0.0010	0.0568	88.5	0.0115
	250	0.1225	0.3413	1.3983	0.0015	0.0462	131	0.0111
	500	0.1943	0.6778	2.2062	0.0023	0.0752	232	0.0175
	750	0.3054	1.0476	3.5002	0.0036	0.1179	358	0.0276
	1000	0.5203	1.8591	6.0195	0.0049	0.1809	486	0.0469
Air Compressors Composite		0.1120	0.3613	0.7320	0.0007	0.0526	63.6	0.0101
Bore/Drill Rigs	15	0.0120	0.0632	0.0754	0.0002	0.0031	10.3	0.0011
	25	0.0196	0.0660	0.1257	0.0002	0.0065	16.0	0.0018
	50	0.0545	0.2505	0.2820	0.0004	0.0194	31.0	0.0049
	120	0.0722	0.4812	0.6155	0.0009	0.0456	77.1	0.0065
	175	0.0930	0.7543	0.9148	0.0016	0.0481	141	0.0084
	250	0.0957	0.3460	1.1847	0.0021	0.0384	188	0.0086
	500	0.1488	0.5566	1.7054	0.0031	0.0614	311	0.0134
	750	0.2996	1.0997	3.4821	0.0062	0.1231	615	0.0270
	1000	0.5360	1.7074	8.3092	0.0093	0.2078	928	0.0484
Bore/Drill Rigs Composite		0.1052	0.5146	1.1331	0.0017	0.0498	165	0.0095
Cement and Mortar Mixers	15	0.0079	0.0388	0.0505	0.0001	0.0029	6.3	0.0007
	25	0.0346	0.0942	0.1633	0.0002	0.0107	17.6	0.0031
Cement and Mortar Mixers Composite		0.0101	0.0434	0.0599	0.0001	0.0035	7.2	0.0009
Concrete/Industrial Saws	25	0.0200	0.0678	0.1279	0.0002	0.0063	16.5	0.0018
	50	0.1231	0.3210	0.3070	0.0004	0.0301	30.2	0.0111
	120	0.1342	0.4976	0.8601	0.0009	0.0719	74.1	0.0121
	175	0.1927	0.8786	1.6459	0.0018	0.0864	160	0.0174
Concrete/Industrial Saws Composite		0.1270	0.4273	0.6566	0.0007	0.0552	58.5	0.0115
Cranes	50	0.1284	0.3166	0.2547	0.0003	0.0289	23.2	0.0116
	120	0.1117	0.3723	0.6542	0.0006	0.0602	50.1	0.0101
	175	0.1211	0.4880	0.9302	0.0009	0.0538	80.3	0.0109
	250	0.1243	0.3464	1.2372	0.0013	0.0470	112	0.0112
	500	0.1821	0.6625	1.7722	0.0018	0.0685	180	0.0164
	750	0.3082	1.1113	3.0564	0.0030	0.1166	303	0.0278
	9999	1.0894	4.1317	12.1879	0.0098	0.3792	971	0.0983
Cranes Composite		0.1594	0.5431	1.4515	0.0014	0.0642	129	0.0144
Crawler Tractors	50	0.1446	0.3520	0.2780	0.0003	0.0320	24.9	0.0131
	120	0.1551	0.5018	0.9038	0.0008	0.0819	65.8	0.0140
	175	0.1941	0.7597	1.4788	0.0014	0.0856	121	0.0175
	250	0.2051	0.5743	1.9440	0.0019	0.0784	166	0.0185

SCAB Fleet Average Emission Factors (Diesel)

EF-OFFROAD

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
	500	0.2913	1.1931	2.7255	0.0025	0.1101	259	0.0263
	750	0.5240	2.1290	4.9881	0.0047	0.1989	465	0.0473
	1000	0.7980	3.3726	8.5998	0.0066	0.2810	658	0.0720
Crawler Tractors Composite		0.1861	0.6409	1.3854	0.0013	0.0854	114	0.0168
Crushing/Proc. Equipment	50	0.2271	0.5592	0.4700	0.0006	0.0520	44.0	0.0205
	120	0.1760	0.5956	1.0382	0.0010	0.0960	83.1	0.0159
	175	0.2367	0.9736	1.8607	0.0019	0.1068	167	0.0214
	250	0.2243	0.6225	2.5465	0.0028	0.0841	245	0.0202
	500	0.3091	1.0542	3.4510	0.0037	0.1187	374	0.0279
	750	0.4956	1.6226	5.6506	0.0059	0.1900	589	0.0447
	9999	1.3820	4.8014	16.0752	0.0131	0.4812	1,308	0.1247
Crushing/Proc. Equipment Composite		0.2152	0.7260	1.4394	0.0015	0.0935	132	0.0194
Dumpers/Tenders	25	0.0108	0.0336	0.0645	0.0001	0.0036	7.6	0.0010
Dumpers/Tenders Composite		0.0108	0.0336	0.0645	0.0001	0.0036	7.6	0.0010
Excavators	25	0.0199	0.0677	0.1261	0.0002	0.0057	16.4	0.0018
	50	0.1131	0.3145	0.2638	0.0003	0.0276	25.0	0.0102
	120	0.1398	0.5318	0.8402	0.0009	0.0781	73.6	0.0126
	175	0.1465	0.6701	1.1143	0.0013	0.0663	112	0.0132
	250	0.1451	0.3934	1.4935	0.0018	0.0519	159	0.0131
	500	0.1984	0.6161	1.9285	0.0023	0.0711	234	0.0179
	750	0.3313	1.0196	3.3023	0.0039	0.1198	387	0.0299
Excavators Composite		0.1483	0.5581	1.1502	0.0013	0.0638	120	0.0134
Forklifts	50	0.0666	0.1824	0.1530	0.0002	0.0163	14.7	0.0060
	120	0.0601	0.2243	0.3497	0.0004	0.0342	31.2	0.0054
	175	0.0738	0.3306	0.5540	0.0006	0.0337	56.1	0.0067
	250	0.0652	0.1707	0.7163	0.0009	0.0227	77.1	0.0059
	500	0.0868	0.2343	0.8909	0.0011	0.0307	111	0.0078
Forklifts Composite		0.0686	0.2319	0.5161	0.0006	0.0281	54.4	0.0062
Generator Sets	15	0.0172	0.0726	0.1154	0.0002	0.0069	10.2	0.0016
	25	0.0300	0.1033	0.1705	0.0002	0.0107	17.6	0.0027
	50	0.1117	0.2904	0.3070	0.0004	0.0284	30.6	0.0101
	120	0.1395	0.5054	0.9075	0.0009	0.0714	77.9	0.0126
	175	0.1672	0.7471	1.4780	0.0016	0.0721	142	0.0151
	250	0.1618	0.5018	2.0720	0.0024	0.0618	213	0.0146
	500	0.2305	0.8858	2.9974	0.0033	0.0917	337	0.0208
	750	0.3838	1.4300	4.9646	0.0055	0.1502	544	0.0346
	9999	1.0080	3.6008	12.1384	0.0105	0.3600	1,049	0.0909
Generator Sets Composite		0.0961	0.3293	0.6440	0.0007	0.0396	61.0	0.0087
Graders	50	0.1400	0.3584	0.2961	0.0004	0.0323	27.5	0.0126
	120	0.1553	0.5459	0.9268	0.0009	0.0849	75.0	0.0140
	175	0.1743	0.7409	1.3532	0.0014	0.0783	124	0.0157
	250	0.1761	0.4934	1.7904	0.0019	0.0662	172	0.0159
	500	0.2149	0.7523	2.1198	0.0023	0.0807	229	0.0194
	750	0.4580	1.5877	4.6098	0.0049	0.1729	486	0.0413
Graders Composite		0.1723	0.6314	1.4338	0.0015	0.0753	133	0.0155
Off-Highway Tractors	120	0.2457	0.7439	1.4200	0.0011	0.1255	93.7	0.0222
	175	0.2326	0.8561	1.7665	0.0015	0.1014	130	0.0210

SCAB Fleet Average Emission Factors (Diesel)

EF-OFFROAD

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
	250	0.1881	0.5347	1.7050	0.0015	0.0735	130	0.0170
	750	0.7400	3.5496	6.8440	0.0057	0.2854	568	0.0668
	1000	1.1197	5.5155	11.4633	0.0082	0.4009	814	0.1010
Off-Highway Tractors Composite		0.2368	0.8385	1.9897	0.0017	0.0974	151	0.0214
Off-Highway Trucks	175	0.1732	0.7625	1.2796	0.0014	0.0771	125	0.0156
	250	0.1639	0.4301	1.6150	0.0019	0.0574	167	0.0148
	500	0.2492	0.7542	2.3188	0.0027	0.0872	272	0.0225
	750	0.4069	1.2210	3.8814	0.0044	0.1436	442	0.0367
	1000	0.6440	2.0615	7.3260	0.0063	0.2219	625	0.0581
Off-Highway Trucks Composite		0.2480	0.7429	2.3885	0.0027	0.0875	260	0.0224
Other Construction Equipment	15	0.0118	0.0617	0.0737	0.0002	0.0030	10.1	0.0011
	25	0.0162	0.0545	0.1039	0.0002	0.0053	13.2	0.0015
	50	0.1033	0.2930	0.2787	0.0004	0.0263	28.0	0.0093
	120	0.1320	0.5419	0.8649	0.0009	0.0740	80.9	0.0119
	175	0.1168	0.5901	0.9927	0.0012	0.0543	107	0.0105
	500	0.1705	0.6068	1.9821	0.0025	0.0678	254	0.0154
Other Construction Equipment Composite		0.1056	0.4108	1.0117	0.0013	0.0442	123	0.0095
Other General Industrial Equipmen	15	0.0066	0.0391	0.0466	0.0001	0.0017	6.4	0.0006
	25	0.0186	0.0632	0.1177	0.0002	0.0054	15.3	0.0017
	50	0.1281	0.3073	0.2413	0.0003	0.0285	21.7	0.0116
	120	0.1459	0.4647	0.8218	0.0007	0.0795	62.0	0.0132
	175	0.1516	0.5816	1.1364	0.0011	0.0676	95.9	0.0137
	250	0.1400	0.3676	1.5016	0.0015	0.0509	136	0.0126
	500	0.2500	0.8031	2.6018	0.0026	0.0919	265	0.0226
	750	0.4153	1.3236	4.4083	0.0044	0.1538	437	0.0375
	1000	0.6374	2.2063	7.1530	0.0056	0.2212	560	0.0575
Other General Industrial Equipmen Composite		0.1847	0.5948	1.6649	0.0016	0.0740	152	0.0167
Other Material Handling Equipmen	50	0.1773	0.4246	0.3355	0.0004	0.0395	30.3	0.0160
	120	0.1417	0.4524	0.8014	0.0007	0.0772	60.7	0.0128
	175	0.1914	0.7367	1.4429	0.0014	0.0856	122	0.0173
	250	0.1481	0.3917	1.6024	0.0016	0.0542	145	0.0134
	500	0.1782	0.5784	1.8750	0.0019	0.0660	192	0.0161
	9999	0.8390	2.9174	9.4509	0.0073	0.2912	741	0.0757
Other Material Handling Equipment Composite		0.1773	0.5556	1.6150	0.0015	0.0715	141	0.0160
Pavers	25	0.0278	0.0845	0.1603	0.0002	0.0092	18.7	0.0025
	50	0.1624	0.3860	0.3110	0.0004	0.0356	28.0	0.0147
	120	0.1638	0.5223	0.9693	0.0008	0.0853	69.2	0.0148
	175	0.2049	0.7959	1.6028	0.0014	0.0903	128	0.0185
	250	0.2426	0.7011	2.3337	0.0022	0.0953	194	0.0219
	500	0.2622	1.1661	2.5319	0.0023	0.1023	233	0.0237
Pavers Composite		0.1774	0.5644	0.9868	0.0009	0.0709	77.9	0.0160
Paving Equipment	25	0.0155	0.0521	0.0993	0.0002	0.0051	12.6	0.0014
	50	0.1384	0.3277	0.2654	0.0003	0.0303	23.9	0.0125
	120	0.1282	0.4084	0.7600	0.0006	0.0668	54.5	0.0116
	175	0.1599	0.6208	1.2577	0.0011	0.0704	101	0.0144
	250	0.1506	0.4363	1.4619	0.0014	0.0592	122	0.0136
Paving Equipment Composite		0.1336	0.4478	0.8963	0.0008	0.0629	68.9	0.0121

SCAB Fleet Average Emission Factors (Diesel)

EF-OFFROAD

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Plate Compactors	15	0.0050	0.0263	0.0317	0.0001	0.0015	4.3	0.0005
Plate Compactors Composite		0.0050	0.0263	0.0317	0.0001	0.0015	4.3	0.0005
Pressure Washers	15	0.0083	0.0348	0.0553	0.0001	0.0033	4.9	0.0007
	25	0.0122	0.0419	0.0691	0.0001	0.0043	7.1	0.0011
	50	0.0413	0.1143	0.1388	0.0002	0.0115	14.3	0.0037
	120	0.0388	0.1487	0.2674	0.0003	0.0193	24.1	0.0035
Pressure Washers Composite		0.0199	0.0666	0.0989	0.0001	0.0070	9.4	0.0018
Pumps	15	0.0148	0.0528	0.0862	0.0001	0.0062	7.4	0.0013
	25	0.0439	0.1142	0.1884	0.0002	0.0133	19.5	0.0040
	50	0.1339	0.3428	0.3479	0.0004	0.0333	34.3	0.0121
	120	0.1441	0.5136	0.9216	0.0009	0.0744	77.9	0.0130
	175	0.1709	0.7489	1.4815	0.0016	0.0742	140	0.0154
	250	0.1593	0.4846	1.9941	0.0023	0.0609	201	0.0144
	500	0.2450	0.9411	3.1080	0.0034	0.0973	345	0.0221
	750	0.4167	1.5559	5.2721	0.0057	0.1631	571	0.0376
	9999	1.3269	4.8008	15.8590	0.0136	0.4723	1,355	0.1197
Pumps Composite		0.0936	0.3096	0.5545	0.0006	0.0393	49.6	0.0084
Rollers	15	0.0074	0.0386	0.0461	0.0001	0.0019	6.3	0.0007
	25	0.0164	0.0551	0.1049	0.0002	0.0054	13.3	0.0015
	50	0.1270	0.3169	0.2753	0.0003	0.0292	26.0	0.0115
	120	0.1201	0.4177	0.7383	0.0007	0.0641	59.0	0.0108
	175	0.1478	0.6270	1.2022	0.0012	0.0659	108	0.0133
	250	0.1542	0.4540	1.6232	0.0017	0.0603	153	0.0139
	500	0.1987	0.7785	2.0882	0.0022	0.0783	219	0.0179
Rollers Composite		0.1176	0.4212	0.7749	0.0008	0.0547	67.1	0.0106
Rough Terrain Forklifts	50	0.1590	0.4186	0.3558	0.0004	0.0377	33.9	0.0143
	120	0.1213	0.4447	0.7326	0.0007	0.0676	62.4	0.0109
	175	0.1640	0.7302	1.2875	0.0014	0.0749	125	0.0148
	250	0.1523	0.4270	1.6632	0.0019	0.0567	171	0.0137
	500	0.2097	0.6871	2.1987	0.0025	0.0788	257	0.0189
Rough Terrain Forklifts Composite		0.1272	0.4766	0.7988	0.0008	0.0678	70.3	0.0115
Rubber Tired Dozers	175	0.2398	0.8686	1.7881	0.0015	0.1036	129	0.0216
	250	0.2776	0.7758	2.4482	0.0021	0.1071	183	0.0250
	500	0.3621	1.7411	3.2071	0.0026	0.1370	265	0.0327
	750	0.5457	2.6075	4.9024	0.0040	0.2071	399	0.0492
	1000	0.8464	4.1786	8.4813	0.0060	0.3018	592	0.0764
Rubber Tired Dozers Composite		0.3379	1.4127	2.9891	0.0025	0.1288	239	0.0305
Rubber Tired Loaders	25	0.0206	0.0697	0.1314	0.0002	0.0064	16.9	0.0019
	50	0.1560	0.4005	0.3333	0.0004	0.0361	31.1	0.0141
	120	0.1206	0.4268	0.7227	0.0007	0.0660	58.9	0.0109
	175	0.1476	0.6326	1.1513	0.0012	0.0664	106	0.0133
	250	0.1493	0.4210	1.5357	0.0017	0.0563	149	0.0135
	500	0.2172	0.7648	2.1684	0.0023	0.0819	237	0.0196
	750	0.4484	1.5625	4.5660	0.0049	0.1700	486	0.0405
	1000	0.6154	2.2308	7.1368	0.0060	0.2156	594	0.0555
Rubber Tired Loaders Composite		0.1440	0.5078	1.1537	0.0012	0.0651	109	0.0130
Scrapers	120	0.2236	0.7169	1.3034	0.0011	0.1177	93.9	0.0202

SCAB Fleet Average Emission Factors (Diesel)

EF-OFFROAD

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
	175	0.2391	0.9290	1.8284	0.0017	0.1053	148	0.0216
	250	0.2618	0.7368	2.4818	0.0024	0.1006	209	0.0236
	500	0.3650	1.5182	3.4250	0.0032	0.1386	321	0.0329
	750	0.6328	2.6115	6.0373	0.0056	0.2413	555	0.0571
Scrapers Composite		0.3202	1.2424	2.9078	0.0027	0.1256	262	0.0289
Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0017	6.2	0.0006
	50	0.1492	0.3827	0.3689	0.0005	0.0364	36.2	0.0135
	120	0.1495	0.5380	0.9446	0.0009	0.0792	80.2	0.0135
	175	0.1907	0.8437	1.6203	0.0017	0.0846	155	0.0172
	250	0.2049	0.6138	2.5094	0.0029	0.0789	255	0.0185
Signal Boards Composite		0.0224	0.0953	0.1615	0.0002	0.0091	16.7	0.0020
Skid Steer Loaders	25	0.0249	0.0700	0.1252	0.0002	0.0079	13.8	0.0022
	50	0.0785	0.2507	0.2463	0.0003	0.0217	25.5	0.0071
	120	0.0607	0.2822	0.4131	0.0005	0.0355	42.8	0.0055
Skid Steer Loaders Composite		0.0692	0.2489	0.2919	0.0004	0.0252	30.3	0.0062
Surfacing Equipment	50	0.0589	0.1520	0.1451	0.0002	0.0142	14.1	0.0053
	120	0.1192	0.4334	0.7683	0.0007	0.0624	63.8	0.0108
	175	0.1071	0.4787	0.9169	0.0010	0.0472	85.8	0.0097
	250	0.1254	0.3883	1.3783	0.0015	0.0494	135	0.0113
	500	0.1854	0.7785	2.0517	0.0022	0.0741	221	0.0167
	750	0.2960	1.2171	3.2929	0.0035	0.1173	347	0.0267
Surfacing Equipment Composite		0.1550	0.6164	1.5685	0.0017	0.0606	166	0.0140
Sweepers/Scrubbers	15	0.0124	0.0729	0.0870	0.0002	0.0033	11.9	0.0011
	25	0.0239	0.0808	0.1524	0.0002	0.0075	19.6	0.0022
	50	0.1508	0.3893	0.3297	0.0004	0.0355	31.6	0.0136
	120	0.1490	0.5329	0.8645	0.0009	0.0843	75.0	0.0134
	175	0.1856	0.8049	1.4276	0.0016	0.0854	139	0.0167
	250	0.1344	0.3643	1.5598	0.0018	0.0489	162	0.0121
Sweepers/Scrubbers Composite		0.1548	0.5380	0.8473	0.0009	0.0686	78.5	0.0140
Tractors/Loaders/Backhoes	25	0.0214	0.0681	0.1317	0.0002	0.0072	15.9	0.0019
	50	0.1257	0.3548	0.3114	0.0004	0.0312	30.3	0.0113
	120	0.0910	0.3623	0.5664	0.0006	0.0515	51.7	0.0082
	175	0.1216	0.5881	0.9646	0.0011	0.0562	101	0.0110
	250	0.1418	0.4037	1.5493	0.0019	0.0523	172	0.0128
	500	0.2630	0.8495	2.7242	0.0039	0.0980	345	0.0237
	750	0.3986	1.2725	4.2276	0.0058	0.1496	517	0.0360
Tractors/Loaders/Backhoes Composite		0.1021	0.3930	0.6747	0.0008	0.0521	66.8	0.0092
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0023	8.5	0.0009
	25	0.0400	0.1355	0.2555	0.0004	0.0125	32.9	0.0036
	50	0.1837	0.4365	0.3620	0.0004	0.0405	32.9	0.0166
	120	0.1509	0.4840	0.9082	0.0008	0.0776	64.9	0.0136
	175	0.2254	0.8843	1.7973	0.0016	0.0990	144	0.0203
	250	0.2770	0.8161	2.6802	0.0025	0.1103	223	0.0250
	500	0.3468	1.6352	3.4013	0.0031	0.1373	311	0.0313
	750	0.6586	3.0677	6.5218	0.0059	0.2602	587	0.0594
Trenchers Composite		0.1675	0.4907	0.7598	0.0007	0.0637	58.7	0.0151
Welders	15	0.0124	0.0441	0.0720	0.0001	0.0052	6.2	0.0011

SCAB Fleet Average Emission Factors (Diesel)

EF-OFFROAD

Air Basin	SC

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM	(lb/hr) CO2	(lb/hr) CH4
	25	0.0254	0.0661	0.1091	0.0001	0.0077	11.3	0.0023
	50	0.1231	0.3025	0.2724	0.0003	0.0287	26.0	0.0111
	120	0.0807	0.2738	0.4899	0.0005	0.0428	39.5	0.0073
	175	0.1333	0.5515	1.0896	0.0011	0.0590	98.2	0.0120
	250	0.1052	0.3022	1.2367	0.0013	0.0400	119	0.0095
	500	0.1327	0.4823	1.5648	0.0016	0.0520	168	0.0120
Welders Composite		0.0805	0.2246	0.2920	0.0003	0.0270	25.6	0.0073

Highest (Most Conservative) EMFAC2007 (version 2.3)
Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)
Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:
Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model and extracting the **Heavy-Heavy-Duty Diesel Truck (HHDT)** Emission Factors.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle/emission categories listed in the tables below, by use of the following equation:

Emissions (pounds per day) = N x TL x EF

where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

The **HHDT-DSL** vehicle/emission category accounts for all emissions from heavy-heavy-duty diesel trucks, including start, running and idling exhaust. In addition, ROG emission factors account for diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors account for tire and brake wear.

The **HHDT-DSL, Exh** vehicle/emission category includes only the exhaust portion of PM10 & PM2.5 emissions from heavy-heavy-duty diesel trucks.

Scenario Year: **2007**
All model years in the range 1965 to 2007

HHDT-DSL (pounds/mile)	
CO	**0.01446237**
NOx	**0.04718166**
ROG	**0.00372949**
SOx	**0.00003962**
PM10	**0.00230900**
PM2.5	**0.00204018**
CO2	4.22184493

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00216752**
PM2.5	**0.00199491**

Scenario Year: **2008**
All model years in the range 1965 to 2008

HHDT-DSL (pounds/mile)	
CO	**0.01361368**
NOx	**0.04458017**
ROG	**0.00351579**
SOx	**0.00004136**
PM10	**0.00215635**
PM2.5	**0.00189990**
CO2	4.21067145
CH4	**0.00016269**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00201296**
PM2.5	**0.00185303**

Scenario Year: **2009**
All model years in the range 1965 to 2009

HHDT-DSL (pounds/mile)	
CO	**0.01282236**
NOx	**0.04184591**
ROG	**0.00329320**
SOx	**0.00004013**
PM10	**0.00199572**
PM2.5	**0.00175227**
CO2	4.21080792
CH4	**0.00015249**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00185393**
PM2.5	**0.00170680**

Scenario Year: **2010**
All model years in the range 1966 to 2010

HHDT-DSL (pounds/mile)	
CO	**0.01195456**
NOx	**0.03822102**
ROG	**0.00304157**
SOx	**0.00004131**
PM10	**0.00183062**
PM2.5	**0.00160083**
CO2	4.21120578
CH4	**0.00014201**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00168861**
PM2.5	**0.00155435**

Highest (Most Conservative) EMFAC2007 (version 2.3) Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)
Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:
Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)

Scenario Year: **2011**
All model years in the range 1967 to 2011

HHDT-DSL (pounds/mile)	
CO	**0.01112463**
NOx	**0.03455809**
ROG	**0.00279543**
SOx	**0.00003972**
PM10	**0.00166087**
PM2.5	**0.00144489**
CO2	4.22045680
CH4	**0.00012910**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00151936**
PM2.5	**0.00139772**

Scenario Year: **2012**
All model years in the range 1968 to 2012

HHDT-DSL (pounds/mile)	
CO	**0.01021519**
NOx	**0.03092379**
ROG	**0.00252764**
SOx	**0.00004042**
PM10	**0.00149566**
PM2.5	**0.00129354**
CO2	4.21590774
CH4	**0.00011651**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00135537**
PM2.5	**0.00124837**

Scenario Year: **2013**
All model years in the range 1969 to 2013

HHDT-DSL (pounds/mile)	
CO	**0.00931790**
NOx	**0.02742935**
ROG	**0.00226308**
SOx	**0.00004086**
PM10	**0.00133697**
PM2.5	**0.00114629**
CO2	4.21518556
CH4	**0.00010441**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00119623**
PM2.5	**0.00109863**

Scenario Year: **2014**
All model years in the range 1970 to 2014

HHDT-DSL (pounds/mile)	
CO	**0.00846435**
NOx	**0.02418049**
ROG	**0.00201594**
SOx	**0.00004092**
PM10	**0.00118458**
PM2.5	**0.00100582**
CO2	4.21279345
CH4	**0.00009261**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00104243**
PM2.5	**0.00096059**

Scenario Year: **2015**
All model years in the range 1971 to 2015

HHDT-DSL (pounds/mile)	
CO	**0.00766891**
NOx	**0.02122678**
ROG	**0.00178608**
SOx	**0.00004082**
PM10	**0.00104715**
PM2.5	**0.00087977**
CO2	4.20902225
CH4	**0.00008369**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00090631**
PM2.5	**0.00083282**

Scenario Year: **2016**
All model years in the range 1972 to 2016

HHDT-DSL (pounds/mile)	
CO	**0.00704604**
NOx	**0.01887374**
ROG	**0.00161035**
SOx	**0.00003952**
PM10	**0.00094448**
PM2.5	**0.00078443**
CO2	4.21063031
CH4	**0.00007508**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00080419**
PM2.5	**0.00073898**

Highest (Most Conservative) EMFAC2007 (version 2.3) Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)
Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:
Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)

Scenario Year: **2017**
All model years in the range 1973 to 2017

HHDT-DSL (pounds/mile)	
CO	0.00650533
NOx	0.01690387
ROG	0.00145203
SOx	0.00004033
PM10	0.00084894
PM2.5	0.00069721
CO2	4.20820129
CH4	0.00006722

HHDT-DSL, Exh (pounds/mile)	
PM10	0.00070873
PM2.5	0.00065111

Scenario Year: **2018**
All model years in the range 1974 to 2018

HHDT-DSL (pounds/mile)	
CO	0.00604721
NOx	0.01526414
ROG	0.00131697
SOx	0.00003934
PM10	0.00076808
PM2.5	0.00062383
CO2	4.20756838
CH4	0.00006182

HHDT-DSL, Exh (pounds/mile)	
PM10	0.00062758
PM2.5	0.00057700

Scenario Year: **2019**
All model years in the range 1975 to 2019

HHDT-DSL (pounds/mile)	
CO	0.00565433
NOx	0.01389113
ROG	0.00120235
SOx	0.00004032
PM10	0.00070198
PM2.5	0.00056085
CO2	4.20637830
CH4	0.00005499

HHDT-DSL, Exh (pounds/mile)	
PM10	0.00056085
PM2.5	0.00051320

Scenario Year: **2020**
All model years in the range 1976 to 2020

HHDT-DSL (pounds/mile)	
CO	0.00532242
NOx	0.01274755
ROG	0.00110621
SOx	0.00003957
PM10	0.00064574
PM2.5	0.00050904
CO2	4.20541416
CH4	0.00005216

HHDT-DSL, Exh (pounds/mile)	
PM10	0.00050364
PM2.5	0.00046227

Scenario Year: **2021**
All model years in the range 1977 to 2021

HHDT-DSL (pounds/mile)	
CO	0.00503726
NOx	0.01179977
ROG	0.00103095
SOx	0.00004033
PM10	0.00059437
PM2.5	0.00046287
CO2	4.21495573
CH4	0.00004734

HHDT-DSL, Exh (pounds/mile)	
PM10	0.00045411
PM2.5	0.00041729

Scenario Year: **2022**
All model years in the range 1978 to 2022

HHDT-DSL (pounds/mile)	
CO	0.00478830
NOx	0.01098794
ROG	0.00096142
SOx	0.00004106
PM10	0.00055427
PM2.5	0.00042597
CO2	4.21520828
CH4	0.00004448

HHDT-DSL, Exh (pounds/mile)	
PM10	0.00041399
PM2.5	0.00037807

AQMD

Highest (Most Conservative) EMFAC2007 (version 2.3)
Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)
Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:
Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)

Scenario Year: **2023**

All model years in the range 1979 to 2023

HHDT-DSL (pounds/mile)	
CO	**0.00457902**
NOx	**0.01031407**
ROG	**0.00090210**
SOx	**0.00004009**
PM10	**0.00052122**
PM2.5	**0.00039592**
CO2	4.21483461
CH4	**0.00004176**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00037922**
PM2.5	**0.00034915**

Scenario Year: **2024**

All model years in the range 1980 to 2024

HHDT-DSL (pounds/mile)	
CO	**0.00444444**
NOx	**0.00974372**
ROG	**0.00084009**
SOx	**0.00003930**
PM10	**0.00050766**
PM2.5	**0.00038320**
CO2	4.19552935
CH4	**0.00003930**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00036682**
PM2.5	**0.00033735**

Scenario Year: **2025**

All model years in the range 1981 to 2025

HHDT-DSL (pounds/mile)	
CO	**0.00431086**
NOx	**0.00932573**
ROG	**0.00080206**
SOx	**0.00004018**
PM10	**0.00048541**
PM2.5	**0.00036326**
CO2	4.19512979
CH4	**0.00003697**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00034397**
PM2.5	**0.00031664**

Scenario Year: **2026**

All model years in the range 1982 to 2026

HHDT-DSL (pounds/mile)	
CO	**0.00420297**
NOx	**0.00898990**
ROG	**0.00077178**
SOx	**0.00003946**
PM10	**0.00046717**
PM2.5	**0.00034564**
CO2	4.19349747
CH4	**0.00003630**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00032670**
PM2.5	**0.00029830**

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Appendix C
Biological Assessment

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BIOLOGICAL ASSESSMENT
FOR THE CHEVRON SOLAR PROJECT SITE
LUCERNE VALLEY, CALIFORNIA

Prepared for:

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September 2009

EXECUTIVE SUMMARY

Chevron Energy Solutions (CES) and its development partners propose to design, construct, operate, and maintain a solar photovoltaic generating station in Lucerne Valley (Project) to meet the needs of California utilities for new renewable energy. The Chevron Solar Project site, comprising approximately 516 acres, is located on Bureau of Land Management lands just south of CA-247, approximately eight miles east of the junction of Barstow Road and Old Woman Springs Road in San Bernardino County, California (Figure 1). The Project includes construction of a solar field, control and maintenance building,, and substation. Construction is scheduled to begin in 2010.

The Federally threatened or endangered species potentially within the project area are included in the table below.

Species (Common/*Latin*)	Listing Status	Determination
desert tortoise *Gopherus agassizil*	Threatened	May affect, likely to adversely affect

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SECTION 1.0 – INTRODUCTION

1.1. PROJECT PURPOSE

The purpose of this Project is to build a solar photovoltaic site located in Lucerne Valley. Construction is scheduled to begin in 2010. California utilities will need in excess of 50,000 gigawatts per year (GW/yr) of new renewable energy generation capability over the next 10 years to meet the State's renewable energy mandate. It is expected that at least 5,000 megawatts (MW) of new solar power will be required to meet this need and that this amount could grow to nearly 10,000 MW. The proposed Project will supply renewable energy to meet these important mid- and long-term needs. In an effort to meet this need, Chevron Energy Solutions (CES) and its development partners propose to design, construct, operate, and maintain a 45 MW photovoltaic generating station, interconnecting to Southern California Edison's (SCE) 33 kilovolts (kV) distribution system. CES selected this Bureau of Land Management (BLM) site for its excellent solar radiation, proximity to potential customers, access to existing electric transmission, and relatively low environmental impact. The Project Right-of-Way (ROW) encompasses the solar field, control and maintenance building, and substation, for a total Project footprint of approximately 516 acres.

1.2. PURPOSE OF THE BIOLOGICAL ASSESSMENT

The purpose of this Biological Assessment (BA) is to provide the necessary information to the U.S. Fish and Wildlife Service (USFWS) to issue a Biological Opinion (BO) to the BLM on the effects of CES's proposed 516-acre Project. Project activities are proposed to take place in a BLM ROW consisting of open space and previously disturbed access roads. Detailed Project descriptions are included in Section 2. A Draft Environmental Impact Statement that has been prepared to describe the Project features includes a detailed biological report. The objective of this BA is to provide USFWS information that will assist in determining the potential effect of the proposed action on the federally-threatened desert tortoise (*Gopherus agassizii*) and its critical habitat. No other federally-listed species or habitats are known to occur within the Project area. This BA was prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act of 1973, as amended (16 USC 1536 [c]).

SECTION 2.0 – PROJECT DESCRIPTION

This section provides a detailed description of the proposed action, including the Project description, Project components, construction methods and processes, operations, and maintenance.

2.1. PROJECT LOCATION

The Chevron Solar Project site, comprising approximately 516 acres, is located on BLM lands just south of CA-247, approximately eight miles east of the junction of Barstow Road and Old Woman Springs Road, east of the community of Lucerne Valley in San Bernardino County, California (Figure 1). The site is located south of Foothill Road and is bordered by Donaldson Road on the west and a drainage that runs approximately 1,300 feet east of Santa Fe Fire Road on the east. The site is within the U.S. Geological Survey (USGS) Cougar Buttes, California 7.5-minute topographic quadrangle in Sections 19, 20, 29, and 30 of Township 4 North, Range 2 East and in Section 24 of Township 4 North, Range 1 East (Figure 2). The elevation range at the site is between approximately 3,000 and 3,120 feet above mean sea level (amsl).

2.2. DEFINITION OF ACTION AREA

The Project Action Area is defined as the same area as the Project footprint and Santa Fe Fire Road, which will be used for the mobilization and transportation of any construction or worker vehicles to gain access to the Project site. This also accounts for potential operations and maintenance activities related to the existing power lines to the north side of Foothill Road into which this Project ties.

2.3. DESCRIPTION OF THE PROPOSED ACTION

The proposed action is to build a phased construction, 45 MW, photovoltaic power plant on the Project site. The first phase will be 20 MW beginning construction in late 2010. The remaining phase of approximately 25 MW is dependent upon the availability of transmission capacity. The second phase may begin construction as early as late 2011. Construction will generally follow the sequence of staking/flagging the perimeter of the Project area (5 days), construction of desert tortoise and security fencing (5 days), access roads (5 days), site grading (25 days), assembly and installation of all Project facilities (190 days), cleanup, and site reclamation of any temporary work areas (10 days). CES expects the construction period to be approximately eight months for each phase.

The construction of Project facilities will involve preparing the site surface and building drainage and storm water diversion systems, access roads, and maintenance tracks. After site grading, underground electrical conduit is installed, then panel frames are assembled. The photovoltaic panels are then set onto and secured to the frames. DC wiring harnesses are then routed to collector boxes and on to the inverters. From the high side of the step up transformers, an underground/overhead 33 kV collector system will carry the power generated by the solar field to the onsite switchyard.

Figure 1 Project Vicinity Map

20047

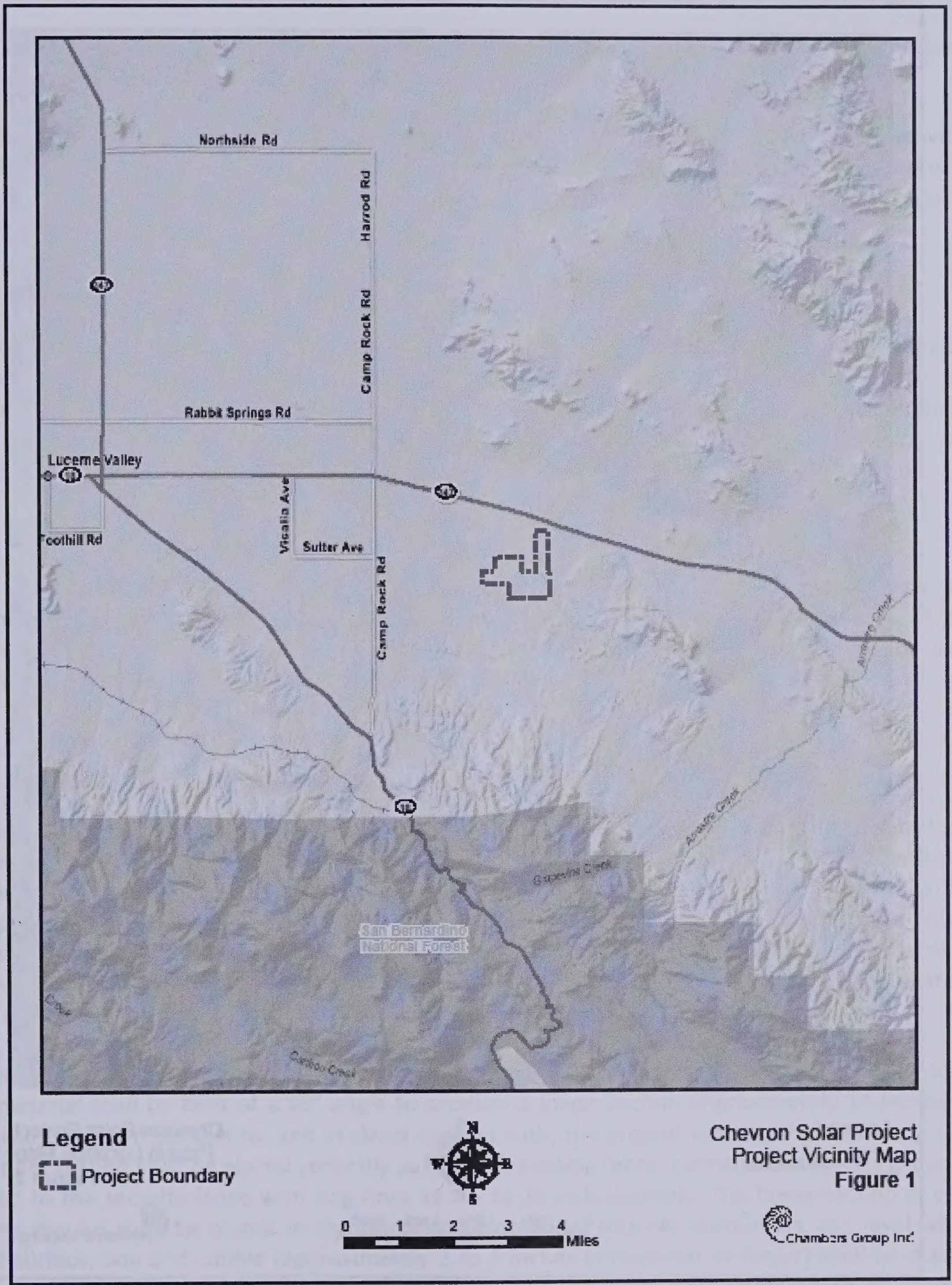
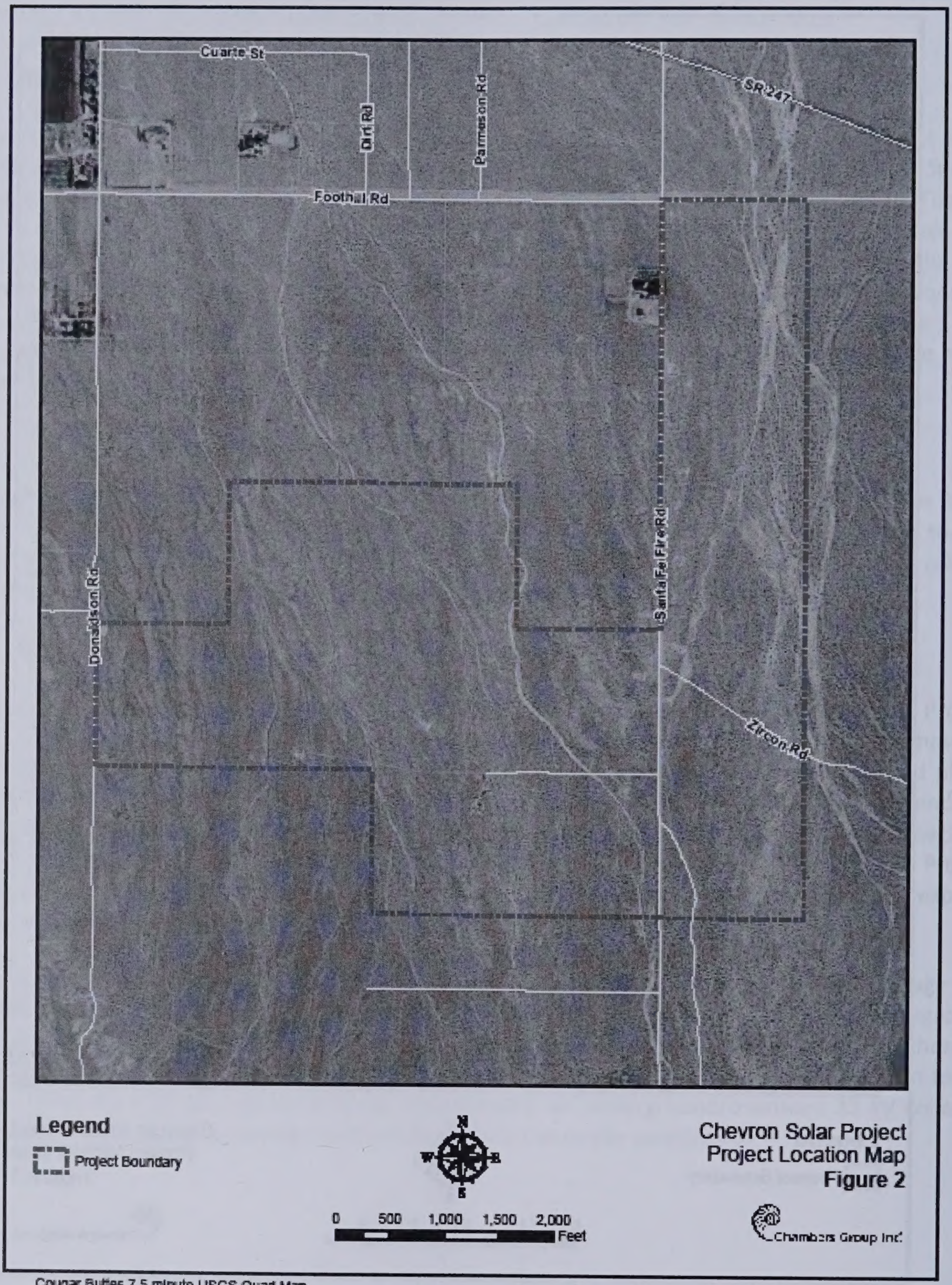


Figure 2 Project Location Map

20047



Cougar Buttes 7.5 minute USGS Quad Map
Sections 19, 20, 29, & 30, Township 4N, Range 2E

2.3.1 Vehicles and Equipment

Use of a variety of equipment is expected in order to accomplish installation of the solar Project site facility. All equipment shall be confined to the roadways and Project ROW.

Up to 59 vehicles are estimated to drive in and out of the Project site during construction activities in addition to approximately 20 personal vehicles. A total of five personal vehicles are estimated to drive in and out of the Project site daily during operation and maintenance (O&M) activities. Vehicles shall drive 20 miles per hour or less, in accordance with desert tortoise protection measures.

2.3.2 Security and Desert Tortoise Exclusionary Fence Installation

Site control will be limited to the area under construction. The security fencing will be initially limited to the area appropriate for phase one (approximately 200 acres). Once the second phase begins construction, security fencing will be expanded to fit the entire site. The perimeter of the Project site will be fenced with an eight-foot high security fence. Desert tortoise exclusionary fencing will be attached to security fencing and will meet standards developed by the USFWS.

Desert Tortoise Exclusionary Fence Materials

Desert tortoise fences shall be constructed with 16-gauge or heavier materials suitable to resist desert environments, alkaline and acidic soils, wind, and erosion. Fence material shall consist of 1-inch horizontal by 2-inch vertical, galvanized welded wire, 36 inches in height. Hog rings shall be used to attach the fence material to the security fence.

Desert Tortoise Fence Construction

Fence material shall be buried a minimum of 12 inches below the ground surface, leaving 22 to 24 inches above ground. A trench shall be dug or a cut made with a blade on heavy equipment to allow 12 inches of fence to be buried below the natural level of the ground. Desert tortoise-proof fencing shall be attached to the security fencing with hog rings placed at 12- to 18-inch intervals. Smooth (barb-less) livestock wire shall be used except where grazing occurs. The desert tortoise fence must be perpendicular to the ground surface or angled slightly away from the Project area towards the side encountered by tortoises. After the desert tortoise fence has been installed and secured, excavated soil will be replaced and compacted to minimize soil erosion.

In situations where burying the fence is not practical because of rocky substrate, the desert tortoise fence material shall be bent at a 90° angle to produce a lower section approximately 14 inches wide, which will be placed parallel to, and in direct contact with, the ground surface; the remaining 22-inch wide upper section shall be placed vertically against the existing fence, perpendicular to the ground and attached to the security fence with hog rings at 12- to 18-inch intervals. The lower section in contact with the ground shall be placed in the direction of potential tortoise encounters and level with the ground surface. Soil and cobble (approximately 2 to 4 inches in diameter or larger) shall be placed on top of the lower section of fence material on the ground, covering up to four inches of material. A minimum of 18 inches shall be maintained between the cobble surface and the top of the tortoise-proof fence. For sections of the fence with a gate, one of three options will be implemented. The first option is fence material buried to a minimum 18-inch depth in line with and below the gate attached to a fence rail that is flush with the ground. The second option is burial of cobble to a minimum 18-inch depth in line with and below the gate. The third option is a shallow-slope concrete apron along the ground surface with the gate positioned on top.

2.4. OPERATIONS AND MAINTENANCE

CES expects an operational lifetime of the solar voltaic Project site to be 25 to 30 years. Operation and maintenance activities within the Project ROW shall be implemented over the life of the Project. No new access roads outside the Project ROW shall be constructed for O&M activities. CES employees shall inspect the desert tortoise exclusionary fencing on a monthly basis by walking the enclosed perimeter .

There would be little ground-disturbing activity associated with ongoing O&M procedures. The activities that could require soil-surface disturbance would be repairs of erosion control devices or exclusionary fencing in the event of storm damage or other emergencies. No new disturbance would occur to carry out O&M activities because this work would occur within the Project ROW. No adverse impacts to desert tortoise are anticipated to occur during O&M activities with the implementation of mitigation measures.

The BLM Barstow Field Office shall be contacted for emergency activities that would have to be carried out outside of the BLM ROW.

2.5. CONSERVATION AND PROTECTIVE MEASURES

Vehicles and construction equipment shall be monitored by Authorized Biologists and desert tortoise monitors until desert tortoise exclusionary fence installation is complete. No construction activities, including fence installation, shall begin until Authorized Biologists and desert tortoise monitors are approved. The names and qualifications of individuals that BLM proposes to allow CES to use as Authorized Biologists will be sent to USFWS for approval. Additional names shall be submitted to BLM as needed for approval, subject to the BO; names of biologists who would be used to monitor future operations and maintenance shall be submitted to BLM for its approval at least 30 days prior to the proposed onset of Project activities.

Authorized Biologists shall conduct clearance surveys, relocate desert tortoises (if necessary) offsite, and ensure that the effects of the Project on the desert tortoise and its habitat are minimized. An Authorized Biologist shall possess thorough and current knowledge of desert tortoise behavior, natural history, ecology, physiology, and shall demonstrate substantial field experience and training to safely and successfully:

- handle and temporarily hold desert tortoises,
- excavate burrows to locate desert tortoises or eggs,
- relocate/translocate desert tortoises,
- unearth and relocate desert tortoise eggs, and
- locate, identify, and record all forms of desert tortoise sign.

Desert tortoise monitors shall be individuals who would monitor Project activities within desert tortoise habitat, ensure proper implementation of protective measures, and record and report desert tortoise and sign observations in accordance with approved protocol; they would also report incidents of noncompliance with the BO and BLM permit stipulations. Desert tortoise monitors shall assist Authorized Biologists during surveys, but would not be authorized to conduct clearance surveys unless directly supervised by an Authorized Biologist; "directly supervised" means the Authorized Biologist would be in direct voice and sight contact with the desert tortoise monitor.

2.5.1 Desert Tortoise Clearance Surveys and Relocation Efforts

Pre-construction surveys for desert tortoise shall be conducted within the Project site ROW and the required buffer areas. A desert tortoise exclusionary fence shall be installed prior to removal of vegetation and/or initiation of facilities construction. BLM and USFWS approved Authorized Biologists and desert tortoise monitors shall walk parallel 30-foot wide linear transects covering 100 percent of the site and within a 100-foot buffer. If tortoises are detected during the survey, an Authorized Biologist shall relocate the tortoise outside of the Project ROW fence within 1,000 feet of the point of capture. Tortoises shall only be relocated onto BLM managed lands. Based on the results of the Spring 2009 desert tortoise survey, only two tortoises may require relocation off the Project site.

2.5.2 Inspection of Desert Tortoise Barriers

The risk level for a desert tortoise to encounter a breach in the fence is greatest in the spring and fall, during and following precipitation events. The desert tortoise fence shall be inspected monthly to maintain an effective barrier to tortoise movement. Inspections shall be documented in writing and include any observations of entrapped animals; repairs needed; tortoises, tortoise burrows, and carcasses; and recommendations for supplies and equipment needed to complete repairs and maintenance. All repairs shall take place within one week of a breach discovery.

2.5.3 Repair and Maintenance of Desert Tortoise Barriers

Repairs of fence wash-outs shall involve either (1) realignment of the fence to an area outside of the wash or (2) re-construct tortoise-proof fencing. Gaps and breaks in the fence will require either (1) repairs to the existing fence in place, (b) replacement of the damaged section, (c) burying fence, or (d) filling in gaps or holes under the fence and replacing cobble on top. All fence damage shall be repaired in a timely manner so that tortoises do not travel through damaged sections. A desert tortoise barrier shall be present at all times. In addition to periodic inspections, debris that accumulates along the fence shall be removed.

2.5.4 General Conservation Measures During Construction activities (GCM)

GCM (CONST) #1: Stream Crossings. Only ephemeral stream crossings are present on the Project site. No perennial or intermittent streams are located within the Project ROW. CES plans to smooth out the ephemeral drainages (a smoother surface for construction and maintenance) and create swales that would allow the movement of water to slowly cross the site and allow sheet drainage at the far north end of the site. Laydown areas would be located at least 100 feet away from drainages. No refueling, equipment repair, or lubrication activities would be allowed within 100 feet of the drainages. Proper spill containment materials to isolate potential spills shall be utilized.

GCM (CONST) #2: Vegetation disturbance. Ground clearing or grading shall occur only within the Project ROW. Some vegetation within the ROW shall be permanently removed. Healthy Joshua trees and all cacti with the exception of cholla species shall be relocated in accordance with a

BLM/USFWS/CDFG approved transplantation protocol. No vegetation shall be removed outside the ROW.

GCM (CONST) #3: Stabilization/reclamation. Surface stabilization and reclamation within and along the boundaries of the Project ROW shall be accomplished by removing all construction debris from the Project area and returning the soil to its original grade around the perimeter of the Project ROW.

2.5.5 Desert Tortoise Protective Measures During Construction Activities (DTM)

To minimize take of the desert tortoise during construction activities, BLM shall require CES to implement the following desert tortoise-specific conservation measures:

DTM (CONST) #1: CES shall designate a **field contact representative** (FCR) who will be responsible for overseeing compliance with BLM permit stipulations and the terms and conditions of the BO, and for coordination with BLM and the CDFG. The FCR shall be onsite during all Project activities. The FCR shall have the authority to stop Project activities if a desert tortoise is at risk or if protective measures are not being adequately implemented. The FCR shall have a copy of the BLM stipulations and the BO at all times. The FCR may be a crew chief, or a field supervisor, a project manager, any employee of the Project proponent, or an Authorized Biologist.

DTM (CONST) #2: An Authorized Biologist shall conduct a **contractor desert tortoise education program**. The program shall be received, reviewed, and approved by BLM prior to the initiation of work. The program may consist of a class or video. The contractor desert tortoise education program shall be designed to inform construction personnel, subcontractors, and all other visitors to the construction site of the biological resources and constraints associated with this Project. Wallet-sized cards with important information for workers to carry are required. Only workers who have successfully completed the education program shall be allowed to enter the construction site. The operator shall be responsible for ensuring that the education program is developed and presented prior to conducting activities. New employees shall participate in the education program prior to working onsite.

The education program will focus on:

- General resource protection, such as the purpose for resource protection; the identification of sensitive resources likely to be found in the general Project footprint; construction practices to be employed to protect sensitive resources; protocol to resolve conflicts that may arise during the construction process; and ramification of non-compliance; and
- Specific desert tortoise education, which shall at a minimum include information on the biology and distribution of the desert tortoise, general behavior and ecology of the desert tortoise, its legal status and occurrence in the Project area, the definition of "take" and associated penalties for violations of State or Federal laws, the measures designed to minimize the effects of construction activities, and reporting procedures to be used in the event that a desert tortoise is encountered.

DTM (CONST) #3: Desert tortoises shall be handled only by Authorized Biologists (or by desert tortoise monitors under the direct supervision of an authorized biologist) and only when necessary. Authorized Biologists and desert tortoise monitors shall follow the "Guidelines for Handling Desert Tortoises During Construction Projects" (Desert Tortoise Council 1999) when handling desert tortoises and their eggs and during examination and excavation of desert tortoise burrows.

DTM (CONST) #4: If a Desert Tortoise Requires Relocation Offsite, only the Authorized Biologist shall handle each desert tortoise when necessary. New latex gloves shall be used when handling each desert tortoise to avoid transfers of infectious diseases between animals. Desert tortoises shall be moved the minimum distance possible within BLM and USFWS approved habitat that are offsite on public lands within its home range. A desert tortoise found above ground shall be moved in the direction in which it was moving and placed under the shade of a shrub.

DTM (CONST) #5: Until the exclusionary fence is complete, Authorized Biologists shall conduct **preconstruction clearance surveys** for desert tortoises within 48 hours of the start of any ground disturbing construction activity. At a minimum, the clearance surveys shall cover the entire Project ROW and a 100-foot Zone of Influence (ZOI) around the BLM ROW Project boundary. Work area boundaries shall be delimited with flagging or other marking to minimize surface disturbance associated with vehicle straying. Special habitat features, such as burrows and drinking sites, identified by the Authorized Biologist shall be avoided to the extent possible. Burrows that are found shall be checked for desert tortoises and eggs. When desert tortoises are found, the **burrows shall be flagged** so that equipment operators and drivers shall clearly see the flagging and avoid the burrows. Unoccupied burrows shall be flagged in a manner that contrasts with occupied burrows.

DTM (CONST) #6: A **construction monitoring team** of at least one Authorized Biologist and one desert tortoise monitor shall be assigned to each fence installation construction area. Fence installation may have more than one construction crew working simultaneously. The assigned desert tortoise monitor shall sweep in front of each construction crew's equipment during its operation. The Authorized Biologist shall have the authority to halt Project activity that might result in harm to a desert tortoise and/or be a violation of the Project stipulations. Project activity shall be allowed to continue only after the desert tortoise is no longer at risk.

DTM (CONST) #7: After fence installation, the Authorized Biologist shall conduct a **100 percent coverage protocol survey for desert tortoises** within the Project site. All desert tortoises found shall be marked and removed from the enclosure and placed outside the nearest fence. Once the survey has been completed, no further interior surveys will be necessary unless a breach in the fencing occurs. If the fence has been breached for more than two weeks without repair, the BLM shall be notified and additional surveys may be required at the discretion of the BLM.

DTM (CONST) #8: Project activities shall be confined to the Project ROW and approved access roads and storage areas. The only exception of construction activities outside the ROW is to connect the solar power generation station to the existing power lines along Foothill Road. This connection shall occur offsite across Foothill Road from the south side of the road to the north side of the road along Santa Fe Fire Road only.

DTM (CONST) #9: Areas to be used for **stockpiles, vehicle turn-arounds, service of vehicles, and storage of equipment and material** shall be restricted to the Project ROW within the desert tortoise exclusionary fencing. Leftover excavated material shall not be left in place, but shall be disposed of in designated areas and in a manner approved by BLM.

DTM (CONST) #10: Project vehicles shall be restricted to the Project ROW or on existing roads. Off-road or cross-country travel shall be prohibited except in emergency situations. No additional dirt or paved roads shall be created off the Project ROW.

DTM (CONST) #11: Until the exclusionary fence is complete, **vehicles parked in desert tortoise habitat shall be inspected** for desert tortoises underneath prior to moving the vehicle. If a desert tortoise is observed underneath the vehicle, an Authorized Biologist shall be contacted. If possible, the desert tortoise should be left to move on its own; otherwise, the desert tortoise shall be removed and relocated by the Authorized Biologist.

DTM (CONST) #12: Vehicle speeds shall not exceed 20 miles per hour during construction activities. The **speed limit** shall be maintained within the Project ROW and on unpaved access roads while driving in desert tortoise habitat.

DTM (CONST) #13: All **construction areas shall be inspected** for desert tortoises until fence installation has been completed and tortoises onsite have been relocated. Any hole or trench shall be inspected for desert tortoises prior to its being closed. Trenches left open overnight or over a weekend shall be covered with metal plates to prevent desert tortoises from entering.

DTM (CONST) #14: Firearms and domestic dogs shall be prohibited from work areas.

DTM (CONST) #15: Trash and food items shall be disposed of promptly in predator-proof containers with re-sealable lids. Trash containers shall be inspected at the end of each work day. These containers shall be regularly removed from the Project site to reduce the attractiveness of the area to common ravens and other desert tortoise predators.

DTM (CONST) #16: Encounters with desert tortoises shall be immediately reported to an Authorized Biologist. The Authorized Biologist shall maintain a record of all desert tortoises encountered during Project activities. Information recorded for each desert tortoise shall include: the location (narrative, vegetation type, and maps); date of observation; general condition of health, including apparent injuries and state of healing; whether the desert tortoise voided its bladder; if moved, location moved from and location moved to; digital photographs of each handled tortoise; and diagnostic markings (i.e., identification numbers or marked lateral scutes).

DTM (CONST) #17: Upon locating a **dead or injured** desert tortoise, CES shall notify the BLM and USFWS immediately. Written notification shall be made within 72 hours of the date and time of the finding or incident (if known), and shall include location of the carcass, a photograph, cause of death (if known), and other pertinent information. Desert tortoise remains shall be left in place (or just outside of the construction footprint or fenced area). Desert tortoises injured through CES activities shall be transported to a veterinarian for treatment at the expense of CES. If an injured animal recovers, the USFWS shall be contacted for final disposition of the animal.

DTM (CONST) #17: All **leaks, spills, or releases** of fuel or other hazardous materials shall be reported immediately to BLM. All material that leaks, spills, or is otherwise released into habitat of the desert tortoise shall be removed immediately. The Authorized Biologist shall ensure that all appropriate measures, including those proposed by CES and the BO terms and conditions, are implemented during the removal of the hazardous materials.

DTM (CONST) #18: No later than 90 days after completion of construction, the FCR and Authorized Biologist shall prepare a report for the BLM and USFWS. If the proposed Project will take place over the course of two or more years, these reports shall be submitted annually. The report shall document the effectiveness and practicality of the mitigation measures, the number of desert tortoises excavated from burrows, the number of desert tortoises moved from the site, the number of desert tortoises killed or injured, and the specific information for each desert tortoise. The report shall make recommendations for modifying the stipulations to enhance desert tortoise protection or to make it more workable for the operator. The report shall provide an estimate of the actual acreage disturbed by various aspects of the operation and shall note any deviations from the approved disturbance footprint, if any.

DTM (CONST) #19: BLM shall require CES to offset the disturbance of desert tortoise habitat resulting from the Project. Since all 512.7 acres of new disturbance (5.3 acres of dirt roads are not considered tortoise habitat) is permanent and shall occur on BLM lands, CES shall make monetary compensation to acquire approximately 513 acres of habitat per the West Mojave Plan [BLM 2006] (513 acres at 1:1 non-DWMA habitat).

2.5.6 GENERAL PROTECTIVE MEASURES DURING OPERATION AND MAINTENANCE ACTIVITIES (GPM O&M)

GPM (O&M) #1: Vegetation disturbance. If unforeseen circumstances require disturbance beyond the Project ROW, CES shall notify BLM immediately.

GPM (O&M) #2: Stabilization/reclamation. Surface stabilization and reclamation within and along the boundaries of the Project ROW shall be accomplished by removing all construction debris from the Project area and returning the soil to its original grade around the perimeter of the Project ROW.

2.5.7 Desert Tortoise Protective Measures During Operation and Maintenance Activities (DTM O&M)

To minimize take of the desert tortoise during O&M activities, BLM shall require CES to implement the following desert tortoise-specific conservation measures:

DTM (O&M) #1: CES shall define a maintenance plan and a routine schedule of O&M activities and associated protocol for approval by BLM.

DTM (O&M) #2: For emergency maintenance involving surface disturbance in desert tortoise habitat, CES shall notify BLM immediately. BLM shall notify USFWS. For both emergency and non-emergency actions, a desert tortoise monitor shall evaluate the site and, if required, monitor the activities. If desert tortoises must be handled, an Authorized Biologist shall conduct these activities. If desert tortoises must be handled during an emergency activity and an Authorized Biologist cannot reach the site in time, CES personnel may handle the desert tortoise only after specific approval from BLM and USFWS.

DTM (O&M) #3: Desert tortoises shall be handled only by Authorized Biologists (or by desert tortoise monitors under their direct supervision) and only when necessary. In the event a desert tortoise wanders into the solar facility through a damaged area of the fence, Authorized Biologists shall follow the "Guidelines for Handling Desert Tortoises During Construction Projects" (Desert Tortoise Council 1999) when handling desert tortoises.

DTM (O&M) #4: If a desert tortoise requires relocation offsite, the Authorized Biologist shall handle each desert tortoise only when necessary. New latex gloves shall be used when handling each desert tortoise to avoid transfers of infectious diseases between animals. Desert tortoises shall be moved the minimum distance possible within BLM and USFWS approved habitat that is offsite on public lands within its home range. A desert tortoise found above ground shall be moved in the direction in which it was moving and placed under the shade of a shrub.

DTM (O&M) #5: The desert tortoise **exclusionary fencing shall be inspected** during O&M activities. The desert tortoise fence shall be inspected on a regular basis sufficient to maintain an effective barrier to tortoise movement. Inspections shall be documented in writing and include any observations of entrapped animals; repairs needed; tortoises, tortoise burrows, and carcasses; and recommendations for supplies and equipment needed to complete repairs and maintenance. During the first two to three years, all fence inspections shall be conducted quarterly at a minimum, to identify and document breaches and problem areas such as wash-outs and vandalism. GPS coordinates shall be recorded for problem areas to identify locations that require more frequent inspections. Following this initial inspection period, subsequent inspections shall focus on known problem areas. In addition, areas prone to wash-outs shall be inspected following precipitation events. A database of problem areas shall be established.

DTM (O&M) #6: All O&M activities shall be confined to the Project ROW. Repairs of exclusionary fencing shall occur within the ROW. If fence repairs require the use of mechanized equipment or vehicles, all vehicles shall access the damaged fence area from within the ROW. Only foot traffic shall occur outside the ROW for fence repairs to minimize disturbance to desert tortoise habitat. If unforeseen circumstances require disturbance beyond the Project ROW, BLM shall notify USFWS immediately.

DTM (O&M) #7: Areas to be used for **stockpiles, vehicle turn-arounds, service of vehicles, and storage of equipment and material** shall be restricted to the Project ROW within the desert tortoise exclusionary fencing. Leftover excavated material shall not be left in place, but shall be disposed of in designated areas and in a manner approved by BLM.

DTM (O&M) #8: Project vehicles shall be restricted to the Project ROW, or on existing roads. Off-road or cross-country travel shall be prohibited except in emergency situations. No additional dirt or paved roads shall be created off the Project ROW during O&M activities.

DTM (O&M) #9: All vehicles shall be parked inside the Project ROW. If unforeseen instances occur that require parking along access roads to the Project site in desert tortoise habitat, the **vehicle shall be inspected** for desert tortoises underneath prior to moving the vehicle. If a desert tortoise is observed underneath the vehicle, an Authorized Biologist shall be contacted. If possible, the desert tortoise should be left to move on its own; otherwise, the desert tortoise shall be removed and relocated by the Authorized Biologist.

DTM (O&M) #10: Vehicle speeds shall not exceed 20 miles per hour while driving along Santa Fe Fire Road to access the Project site. The **speed limit** shall be maintained within the Project ROW and on unpaved access roads while driving in desert tortoise habitat.

DTM (O&M) #11: Firearms and domestic dogs shall be prohibited from the Project site.

DTM (O&M) #12: Trash and food items shall be disposed of promptly in predator-proof containers with re-sealable lids. Trash containers shall be inspected at the end of each work day.

DTM (O&M) #13: Spike strips shall be installed within the solar facility as determined appropriate by an Authorized Biologist after inspection of the solar facility for areas that may be prone to perching. The spike strips shall prevent ravens from perching along the Project site boundary to minimize predation against desert tortoises.

DTM (O&M) #14: Encounters with desert tortoises shall be immediately reported to an Authorized Biologist. The Authorized Biologist shall maintain a record of all desert tortoises encountered during O&M activities. Information recorded for each desert tortoise shall include: the location; date of observation; general condition of health and apparent injuries and state of healing; location of damaged area of fence; if moved, location moved from and location moved to and whether the desert tortoise voided its bladder; and diagnostic markings (i.e., identification numbers or marked lateral scutes).

DTM (O&M) #15: Upon locating a **dead or injured** desert tortoise, CES shall notify the BLM and USFWS immediately. Written notification shall be made within 72 hours of the date and time of the finding or incident (if known), and shall include location of the carcass, a photograph, cause of death (if known), and other pertinent information. Desert tortoises injured through CES activities shall be transported to a veterinarian for treatment at the expense of CES.

DTM (O&M) #16: All **leaks, spills, or releases** of fuel or other hazardous materials along access roads to the Project site within desert tortoise habitat shall be reported immediately to BLM. All material that leaks, spills, or is otherwise released into habitat of the desert tortoise shall be removed immediately. CES shall adhere to all appropriate measures of the BO terms and conditions during the removal of the hazardous materials.

2.6. NON-COMPLIANCE

If CES fails to comply with any of its proposed protective measures or the terms and conditions of the BO, BLM shall suspend the new ROW grant and temporary use permit. Non-compliance typically results in a conference with USFWS. Re-initiation of the BO potentially may occur. CES shall maintain communication with BLM regarding efforts and progress to comply with all protective measures.

SECTION 3.0 – DESERT TORTOISE (FEDERAL- AND STATE-LISTED THREATENED)

3.1. CONSULTATION WITH LOCAL FISH AND GAME

The project Applicant will have to consult with DFG on the desert tortoise to fulfill obligations under the California Endangered Species Act. As part of the consultation, additional avoidance and minimization measures as well as additional compensation for habitat loss may be required by the state. It is assumed by this BA that all such measures and mitigation shall be implemented and will be supplementary to the measures proposed above.

3.2. LITERATURE REVIEW

Prior to performing the field surveys, existing documentation relevant to the Project site was reviewed. The most recent records of the California Natural Diversity Database managed by the CDFG (2009) were reviewed for the quadrangles containing and surrounding the Project site (i.e., *Cougar Buttes, Fry Mountains, Grand View Mine, Lucerne Valley, Old Woman Springs,* and *White Horse Mountain,* California USGS 7.5 minute quadrangles). Site visits are detailed below.

3.2.1 Initial Site Visit

The initial field survey was conducted on the Project site to identify any potential for occurrence of sensitive species, vegetation communities, or habitats to support sensitive wildlife species. The survey was conducted on foot throughout the Project site between 0830 and 1612 hours on March 16, 2009. In addition, the biologists traveled by car along dirt roads, such as Santa Fe Fire Road, Zircon Road, Foothill Road, Donaldson Road, and other unnamed dirt roads within and adjacent to the Project site. Photographs of the Project site were recorded to document existing conditions. Weather conditions during the survey included temperatures ranging from approximately 42 to 77 degrees Fahrenheit with clear skies and dry conditions. Chambers Group biologists Heather Clayton and Paul Morrissey conducted the general reconnaissance survey.

3.2.2 Focused Desert Tortoise Survey

The protocol level focused surveys for desert tortoise were conducted on March 24 to 27, March 31 to April 3, and April 7 to 10, 2009, by biologists Paul Morrissey, Kris Alberts, Nichole Cervin, Laura Gorman, Rebecca Alvidrez, Lisa Wadley, and Saraiah Skidmore. The objective of the survey was to determine if desert tortoises are currently or have recently inhabited the site or the adjacent habitat surrounding the Project site. Weather conditions during all focused surveys ranged from temperatures of 41 to 82 degrees Fahrenheit, with average winds from 0.8 to 18 miles per hour, and cloud cover from 0 to 100 percent. One rainfall event occurred on April 10, 2009. No surface water was present on the Project site during this event.

3.2.3 Results of the Desert Tortoise Surveys

The survey was conducted on foot over the entire Project site utilizing 30-foot (approximately 10-meter) belt transects to provide 100 percent coverage on the site. A 500-foot buffer was examined due to burrowing owl surveys being conducted concurrently. In areas with a high density of tortoise sign or where tortoises were encountered, buffer transects were extended up to 1,200 feet from the edge of the Project site. This occurred in the southeast and southwest areas of the Project site. The ZOI survey was conducted in the areas directly adjacent-to and surrounding the Project site where suitable desert tortoise habitat exists. The ZOI survey included single line transects at 600, 1,200, and 2,400 feet parallel to the edge of the Project boundaries in accordance with protocol. Habitat conditions for each transect were documented and included vegetation communities, soil types, landscape usage, topography, weather conditions, and the amount of existing human-caused disturbance. All sign of desert tortoises including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks were recorded on standardized data sheets. If a burrow was observed, a mirror was used to reflect sunlight into the burrow to visually determine if desert tortoise were present. Locations of all sign were recorded using GPS units. Photographs were taken of transect habitat characteristics, desert tortoise encounters, and desert tortoise sign.

A total of seven desert tortoises were detected during the focused surveys. One live tortoise was observed within the Project boundaries in the southeast corner of the site. Five live tortoises were detected within the ZOI survey area southeast of the Project site; this area is an active tortoise area. One live tortoise was observed offsite in the southwest ZOI survey area. Information on live tortoises encountered is provided in Table 1. In addition, two tortoises were observed on June 26, 2009, during a focused burrowing owl survey. These two individuals were observed foraging in the southwestern area, one within the Project site in the southwestern corner, and one within the buffer survey area immediately offsite. These individuals were not photo-documented; therefore, it cannot be determined whether they were documented in the previous survey. These two tortoises appeared healthy and did not show signs of an upper respiratory track disease or damage from predatory attacks. Both the southeast and southwest areas of the Project site are determined to support foraging adult tortoises.

Four skeletal remains and one carcass were observed on or near the Project site. Carcass classification is broken down into five categories, according to USFWS desert tortoise survey methodology and sign documentation protocol (USFWS 1992): Class 1 shell remains are still fresh or putrid. Class 2 shell remains are normal in color and the scutes still adhere to the bone, while in Class 3 remains, scutes are peeling off. In Class 4 shell remains, the shell bone is falling apart, and the growth rings on the scutes are peeling. If the remains are disarticulated and scattered, the remains are Class 5. Information pertaining to the carcass and skeletal remains observed in this survey is provided in Table 2.

Other forms of desert tortoise sign were observed on and near the site. Sign included active and inactive burrows, fresh and old scat, and tracks. Tracks were generally found in sandy areas where fresh scat and active burrows were located.

Desert tortoises are solitary animals and travel long distances in order to mate during the breeding season. Tortoises and sign were found on the east and west sides of the Project site, which likely indicates that tortoises cross the site for mating during the breeding season. The two male tortoises and one female tortoise found on the southwestern area of the Project site most likely utilize the burrows identified along the southern border. The Project site allows for safe passage to the area of high density tortoise habitat located to the southeast of the Project site; and it also serves as foraging grounds for desert tortoises, especially where annual vegetation and beavertail cacti (*Opuntia basilaris* var. *basilaris*) showed signs of recent feedings in both the southeast and southwest corner of the Project site.

Table 1
Desert Tortoise Encounters During Focused Surveys

Tortoise (ID #)	Date	Original Coordinates*		Age Class	Sex	Habitat	Health
		Easting	Northing				
1	3/26/09	0518964	3807854	Adult	F	Creosote-White Bursage Series near 1200' ZOI in SE area	Shell had scratch marks and a couple chips, but tortoise appeared healthy. No URTD
2	3/26/09	0518703	3808220	Adult	F	Creosote-White Bursage Series in buffer in SE area	Had a bite mark, but tortoise appeared healthy. No URTD
3	3/27/09	0518702	3808069	Adult	UNK	Creosote-White Bursage Series on site in SE area	Old small gnaw mark above left hind leg, otherwise tortoise appeared healthy. No URTD
4	4/1/09	0518232	3807553	Adult	UNK	Creosote-White Bursage Series on 2400' ZOI in SE	Tortoise appeared healthy. No URTD
5	4/7/09	0518068	3807754	Adult	M	Creosote-White Bursage Series near 1200' ZOI in SW	Shell had small chips but tortoise appeared healthy. No URTD
6	4/10/09	0518312	3806948	Adult	M	Creosote-White Bursage Series near 1200' ZOI in SE area	Tortoise appeared healthy. No URTD
7	4/17/09	0516223	3807569	Adult	M	Creosote-White Bursage Series in buffer in SE area	Shell had a small chip but tortoise appeared healthy. No URTD

Table 2
Desert Tortoise Skeletal and Shell Remains Observed During Focused Surveys

Tortoise Remains (ID)	Class	Location*		MCL (mm)	Time Since Death	Cause of Death	Location Description
		Easting	Northing				
1	5	0518937	3807793	275	>4 YRS.	Unknown	In the open within the ZOI.
2	4	0519044	3807786	275	>4 YRS.	Possible gun shot and/or scavenged.	In the open within the ZOI, near a dead white bursage.
3	5	0518892	3807874	UNK	>4 YRS.	Unknown	In the open within the ZOI near a tortoise shelter site.
4	3	0518101	3808140	120	2-4 YRS.	Unknown, evidence of scavenging.	In the open and under a dead Joshua tree within the site boundaries.
5	3	0515774	3807597	120	2-4 YRS.	Possible gun shot and/or scavenged.	Scattered over 20 feet in front of a burrow within the ZOI.

Burrow classification is broken down into five categories according to USFWS desert tortoise survey methodology and sign documentation protocol (USFWS, 1992). An active burrow with recent desert tortoise sign, such as scat, is categorized as Class 1. A Class 2 burrow is considered to be a definite desert tortoise burrow in good condition but has no evidence of recent use. Class 3 and 4 burrows are fairly deteriorated, but a Class 3 is determined still to be a desert tortoise burrow, while a Class 4 burrow is questionable. A Class 5 burrow is in somewhat good condition and could possibly be a desert tortoise burrow. Desert tortoises utilize several different types of burrows, depending upon season and activity. Burrows can range from 2 to 10 meters deep and may be modified small mammal dens to shallow hollows that are used temporarily during dispersal activities (Ernst et al., 1994). As desert tortoise will often utilize small mammal dens, it is not uncommon to classify burrows as potential desert tortoise burrows when in fact they initially belong to other wildlife in the area, such as kit fox and/or black-tailed jackrabbit.

A total of 107 burrows were observed on or near the Project site. Table 3 shows the breakdown of the number of burrows into separate class categories. Within the Project site, 3 Class 1 through 3 burrows and 31 Class 4 to 5 tortoise burrows were observed. Within the 500-foot buffer, 8 Class 1 through 3 burrows and 17 Class 4 to 5 burrows were observed. Within the ZOI, 27 Class 1 through 3 burrows and 21 Class 4 to 5 burrows were observed.

A total of 38 tortoise scats were observed within the buffer or within the ZOI. No desert tortoise scat was identified within the Project site. Five tortoise scats were observed within the 500-foot buffer, and thirty-three scats were observed within the ZOI. Scat classification is also broken down into five categories according to USFWS desert tortoise survey methodology and sign documentation protocol (USFWS 1992). A Class 1 scat is wet, not from rain or dew, or is freshly dried, and has an obvious odor. A Class 2 scat is dried with a glaze, has some odor, and is dark brown. Class 3 and 4 scats are dried with no glaze or odor, but a Class 3 scat is light brown showing little signs of bleaching, while Class 4 is light brown to pale yellow with loose material. A Class 5 scat is bleached or consists only of plant fiber. Table 3 shows the breakdown the number of scats into separate class categories.

Table 3
Desert Tortoise Sign Observed During Focused Surveys

	Burrows within Project Site	Burrows within Buffer Area	Burrows Within ZOI Area	Total Burrows Identified	Scat
Class 1	3	9	26	38	2
Class 2					16
Class 3					12
Class 4	30	21	18	69	0
Class 5					8
Total	**33**	**30**	**44**	**107**	**38**

3.3. GENERAL DESCRIPTION AND HABITAT REQUIREMENTS

The desert tortoise (*Gopherus agassizii*) is a federal- and state-listed threatened species. The desert tortoise ranges from central Nevada and extreme southwestern Utah south through southeastern California and southwestern Arizona into northern Mexico (Berry et al., 2002). In California, the historic range of this species includes northeastern Los Angeles, eastern Kern, eastern San Diego, and southeastern Inyo counties, as well as most of San Bernardino, Riverside, and Imperial counties. The desert tortoise inhabits river washes, rocky hillsides, slopes, and flat deserts with sandy or gravelly soils. Soil conditions must be friable for burrow and nest construction. Creosote bush, white bursage, saltbush, Joshua tree, Mojave yucca, and cacti are often present in the habitat along with other shrubs, grasses, and wildflowers. The desert tortoise is entirely herbivorous and forages on a variety of plants, including cactus species and annual vegetation. The desert tortoise is a medium-sized tortoise with an adult carapace length of about 8 to 14 inches. Males, on average, are larger than females and are distinguished by a more concave plastron, longer gular horns, larger chin glands on each side of the lower jaw, and longer tails. Carapace color varies from light yellow-brown (horn color) to dark grey-brown. In addition to range, a composite of characteristics often is necessary to distinguish the desert tortoise from other species of gopher tortoise, but its most unique feature is its very large hind feet. Desert tortoise populations are declining due to habitat destruction/loss, predation, illegal collecting, grazing, and OHV use (Berry 1997).

Habitat for the desert tortoise occurs on the Project site. Soil conditions appropriate for burrow construction are present onsite. Recent historic records report that desert tortoises have occurred within the vicinity of the Project site. A total of seven desert tortoises were detected during the focused surveys. One live tortoise was observed during the focused surveys within the Project boundaries in the southeast corner of the site. Five live tortoises were detected within the ZOI survey area during the focused surveys, southeast of the Project site; this area is an active tortoise area. One live tortoise was observed offsite in the southwest ZOI survey area during the focused surveys. In addition, two tortoises were observed on June 26, 2009, during a focused burrowing owl survey, foraging in the southwestern area, one within the Project site in the southwestern corner, one within the buffer survey area immediately offsite. These individuals were not photo-documented; therefore, it cannot be determined whether these individuals migrated from the southeastern area and were previously documented during the desert tortoise focused surveys. However, with this supplemental data, both the southeast and southwest area of the Project site are determined to support foraging adult tortoises. Please see the Results of the Desert Tortoise Surveys below for more details regarding this species.

The density of desert tortoises identified in the Project area surveyed is relatively small compared to other known populations in the vicinity, and the proposed area for the solar site is not contained within designated critical habitat. Critical habitat for desert tortoise exists approximately 10 miles to the north of the Action Area. Although very few tortoise and tortoise sign were identified in the southeastern area of the Project site, suitable habitat, including burrow substrate and forage vegetation, is found primarily to the south, southwest, and southeast outside of the Action Area. Currently, roads such as Santa Fe Fire Road, Foothill Road, Zircon Road, Donaldson Road, and several unnamed dirt roads exist in or adjacent to the Action Area. These roads are traveled by local residents for recreation activities, such as OHV and firearms use. Many dump sites were identified along the dirt roads. Tortoise carcasses were identified near areas with hundreds of shotgun rounds, though death by shooting could not be positively determined since many of the tortoise carapaces were scattered throughout the area.

SECTION 4.0 – ENVIRONMENTAL BASELINE

The Project site is located on BLM land. The surrounding area of the Project site is comprised of open space dominated by creosote bush and white-bursage with desert washes and disturbed communities. A few scattered residential homes exist along the Project boundary or just outside the 500 ft buffer. One trailer home exists near the southern boundary of the site, and a second home exists approximately one-half mile southeast of the site. Several dirt roads cross the Project site, which are used as access to homes or for off-highway vehicle (OHV) recreational activities and/or camping. A few dump sites, historic and recent, were observed during surveys, along with fire pits, tire tracks, and shotgun shells. The common raven, a predator of the desert tortoise, was observed throughout the surveys on the Project site. Signs of dog activity were also present.

4.1. SOILS

The U.S. Department of Agriculture (USDA) Soil Conservation Service and USDA Natural Resources Conservation Service (NRCS) Web Soil Survey has not mapped soils within the Project site (USDA 2009). No Order III soil survey has been conducted on or in the vicinity of the proposed Project area. Data derived from the State's soil geographic database (STATSGO) has limitations. STATSGO (Order V) in particular was meant for regional planning purposes with large scale extrapolation from other sources. With very limited ground truthing available, this data has limited application. The 1970 General Soil Map for the SW Desert Area, San Bernardino County, has mapped and described the soils within the Project area as the Arizo-Daggett Association (excessively drained and somewhat excessively drained, very deep, gravelly soils). The following includes a description of soils identified during the reconnaissance level survey.

The Project site consists primarily of sandy loam soils on the flat terraces, loamy sandy soils, and loamy sand within the drainages and washes. The loamy sandy soils were more prevalent in the northern portion of the Project site and in the eastern area along the washes. Overall, these are well drained soils typical of sandy environments. A layer of caliche rock was exposed in some areas of the washes and dirt roads, and desert pavement type soils were observed in patches throughout the western area of the site. These substrates were unvegetated.

4.2. VEGETATION

4.2.1 Creosote Bush-White Bursage Series (319 acres)

The Creosote Bush-White Bursage Series is an extremely xeromorphic (i.e., plants adapted for survival in dry conditions) mixed evergreen-deciduous shrubland that typically consists of well-drained secondary soils with very low available water holding capacity. The community typically is found on slopes, fans, and in valleys at elevations up to 3,300 feet amsl (Sawyer and Keeler-Wolf 1995). This community type is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), with creosote bush occupying 55 percent and white bursage occupying 45 percent of the total vegetative cover in this portion of the Project site. The total vegetative cover by perennials was approximately 45 percent. The substrate onsite consists of sandy loam and loamy sand. Often, many species of ephemeral herbs in this community will flower in late March and April if winter rains are sufficient. Numerous annual species, still in the vegetative state prior to the onset of flowers, were observed in this community in March and bloomed in April and through the first part of May 2009.

Creosote Bush-White Bursage Series is present throughout the eastern portion of the Project site. In addition to creosote bush and white bursage, other common plant species found on the Project site typical of this vegetation community include: common fiddleneck (*Amsinckia menziesii*), blackbush (*Coleogyne ramosissima*), Nevada ephedra (*Ephedra nevadensis*), winter fat (*Krascheninnikovia lanata*), box-thorn (*Lycium* sp.), blazingstar species (*Mentzelia* spp.), golden cholla (*Opuntia echinocarpa*), big galleta grass (*Pleuraphis rigida*), and Joshua tree (*Yucca brevifolia*).

4.2.2 White Bursage Series (176 acres)

White Bursage Series, described by Sawyer and Keeler-Wolf (1995), is a mixed evergreen-deciduous shrubland dominated by white bursage with creosote bush also present in lower proportion. The shrub canopy, typically less than 10 feet in height, is two-tiered with few creosote bush shrubs in the upper tier over the lower tier consisting of white bursage. The ground layer is open with annual species seasonally present. The White Bursage Series typically occurs on alluvial fans or at the base of a mountain where several alluvial fans have merged (bajadas), stabilized sand fields, and upland slopes with well-drained soils at elevations up to 4,000 feet amsl. The substrate onsite is gravelly sand with small patches of desert pavement scattered throughout this community. The ground appeared more compacted and with larger soil particles in this series than was observed in the Creosote Bush-White Bursage Series onsite.

White Bursage Series is present on the northwestern portion of the Project site. In contrast to the Creosote Bush-White Bursage Series where creosote bush and white bursage exhibited similar cover values, the White Bursage Series is comprised of 75 percent white bursage and only 25 percent creosote bush of the total vegetative cover (approximately 35 percent) within this portion of the site. In addition to these species, other common plant species found onsite typical of the White Bursage Series include: Nevada ephedra, Pima rhatany (*Krameria erecta*), and box-thorn. Less common species found within this community include: common fiddleneck, wingnut cryptantha (*Cryptantha pterocarya*), flat-topped buckwheat (*Eriogonum deflexum*), California buckwheat (*Eriogonum fasciculatum*), wishbone bush (*Mirabilis* sp.), phacelia (*Phacelia* sp.), big galleta grass, and Joshua tree. Joshua tree is less abundant in this portion of the site than within the Creosote Bush-White Bursage Series.

4.2.3 Desert Wash (18 acres)

Desert Wash habitats are characterized as sandy or gravelly drainages and arroyos of the lower Mojave and Colorado deserts. This community closely resembles the Mojave Wash Scrub as described by Holland (1986). These washes typically have braided channels that rearrange with every surface flow event. The substrate of the Desert Wash area onsite consists of loose sandy soil with very little ground cover.

Desert Wash is present in the northeastern corner of the Project site and along the eastern edge of the site. The Desert Wash environments support a larger diversity of plant species than is found throughout other portions of the Project site. The Desert Wash community onsite is dominated by cheesebush (*Hymenoclea salsola*) and blunt tansymustard (*Descurainia pinnata* ssp. *glabra*), with white bursage, Nevada ephedra, creosote bush, desert alyssum (*Lepidium fremontii* var. *fremontii*), and sandpaper plant (*Petalonyx thurberi*) also common. Other less frequently occurring species in the Desert Wash include common fiddleneck, four-wing saltbush (*Atriplex canescens*), blackbush, wingnut cryptantha, bladderpod (*Isomeris arborea*), scalebroom (*Lepidospartum squamatum*), golden cholla, big galleta grass, London rocket (*Sisymbrium irio*), and occasional Joshua trees.

4.2.4 Disturbed/Sparsely Vegetated (3 acres)

Portions of the site that are classified as Disturbed are those areas that are either devoid of vegetation (cleared or graded) such as dirt roads or those heavily compacted areas that are dominated by a sparse cover of ruderal vegetation. Disturbed Areas are present within the Project site along the major, named dirt roads, in portions of the dry washes where scouring has taken place, in large areas of desert pavement, and on sediment berms throughout the site. Only sparse vegetation is found growing in these areas. Species growing in Disturbed areas include stunted white bursage shrubs, red-stemmed filaree (*Erodium cicutarium*), sapphire eriastrum (*Eriastrum sapphirinum*), and Mediterranean schismus (*Schismus barbatus*).

4.3. WILDLIFE

4.3.1 Birds

Thirteen bird species were observed/detected on the Project site during the one-day reconnaissance level survey. Species included black-throated sparrow (*Amphispiza bilineata),* sage sparrow (*Amphispiza belli*), California quail (*Callipepla californica),* horned lark (*Eremophila alpestris*), mourning dove (*Zenaida macroura*), rock pigeon (*Columba livia*), black-tailed gnatcatcher (*Polioptila melanura*), ladder-backed woodpecker (*Picoides scalaris*), common raven (*Corvus corax*), European starling (*Sturnus vulgaris*), northern harrier (*Circus cyaneus*), and house finch *(Carpodacus mexicanus).* These thirteen species are commonly found in the region. In addition, one potential ostrich (*Struthio camelus*) or possibly an emu carcass was found scattered on the western area of the Project site, most likely an escaped or released pet.

4.3.2 Mammals

Seven common mammal species were observed or detected on the Project site during the survey. Common species observed were the black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), domestic dog (*Canis familiaris*), and kit fox (*Vulpes macrotis*). A property within the Project site hosts approximately five domestic dogs within a chain linked fence, one dead dog was found buried nearby. In addition, sheep (*Ovis aries*) carcasses were observed in the western portion of the site. Two species of ground squirrels were observed on site, the Antelope ground squirrel (*Ammospermophilus leucurus*) and the round-tailed ground squirrel (*Spermophilus tereticaudus*).

SECTION 5.0 – EFFECTS OF THE PROPOSED ACTION

5.1. GENERAL ANALYSIS

The Mojavean desert habitat found within the Project site is regionally important to many wildlife species, including the desert tortoise. The proposed Project has been designed to meet CES's needs while minimizing impacts to the desert tortoise and its habitat.

Impacts associated with the construction of the solar facility shall be contained almost entirely within the ROW. The only exception of construction activities outside the ROW is to connect the solar power generation station to the existing power lines located along Foothill Road at the northern boundary of the Project site. Foothill Road is an established and maintained dirt road. This connection shall require crossing from the south side of Foothill Road to the north side of Foothill Road along Santa Fe Fire Road, the only area for construction activities located off the Project ROW. No removal of vegetation shall occur during this process. No disturbance of desert tortoise habitat shall occur because roads are not considered desert tortoise habitat.

Permanent removal of vegetation shall occur only within the ROW. Relocation of healthy Joshua trees between 2 feet and 10 feet in height and healthy cacti such as beaver tail cactus over 2 feet in height shall be conducted in accordance with the approved Restoration Plan. No new disturbance shall be created by the restoration process and no vegetation removal shall occur outside the Project ROW.

The installation of desert tortoise exclusionary fencing shall prevent impacts to tortoises within the Project ROW. Due to the small size of the solar facility (approximately 0.5 miles long), minimal impacts to wildlife corridors and wildlife passage within the area is expected. Impacts to desert tortoise wandering capabilities for foraging and breeding activities shall be minimal.

Relocation of desert tortoise off the Project ROW may be required. Based on the results of the baseline surveys, the desert tortoise population on the Project site is relatively small. Two tortoises were observed within the Project site; one in the southwest and one in the southeast corner. All other tortoises detected during the surveys outside the Project ROW (within the ZOI and buffer area) are not expected to be affected by construction activities. Monitoring of these tortoises and implementation of protective measures within the BO shall minimize impacts to the tortoises identified in the immediate area.

Relocation of any tortoise within the Project ROW shall be conducted in accordance with DTM (CONST) #4, and in accordance with all measures outlined in the BO. Relocation of any tortoise is not expected to negatively impact the small population of tortoises identified in the immediate area south of the Project site.

Once constructed and operational, the solar facility shall require very little maintenance. Operation and maintenance shall require regularly-scheduled inspections of the exclusionary fencing on foot and infrequent repairs at isolated locations after thunderstorms or heavy rain events. Repairs shall abide by the desert tortoise protective measures defined in the BO. Access to damaged areas along the fence shall occur from within the ROW.

5.2. DIRECT EFFECTS

The installation of the desert tortoise exclusionary fence, construction of the solar facility, and operation and maintenance of the solar facility, could pose threats to the desert tortoise.

Construction activities shall expose desert tortoises to a fairly high level of human activity for a relatively brief time period (approximately eight months per construction phase). Most of the hazards shall be from operation of equipment and vehicles adjacent to occupied desert tortoise habitat. The installation of desert tortoise exclusionary fencing around the perimeter of the Project site, implementation of protective measures in the BO, presence of Authorized Biologists and desert tortoise monitor teams, and regular inspections of the exclusionary fencing shall minimize impacts to desert tortoise.

Vehicular and equipment travel on roadways outside the Project ROW could cause collisions with desert tortoises that result in injury or death. Although access into the Project ROW shall be on existing roads, the increased level of traffic during construction activities, and to a lesser extent, the increased level of traffic during O&M activities could result in tortoise injury or death. Equipment and vehicles used during routine operation and maintenance could be a hazard to desert tortoises living offsite.

Desert tortoises may emerge during warm periods in winter to sun themselves and to search for food and water. In the more active months, desert tortoises may seek shelter from the sun and heat under vegetation or construction equipment and vehicles and may be crushed when the equipment and vehicles are moved. The exclusionary tortoise fencing and implementation of measures outlined within the BO should minimize impacts to tortoise injury or death within the Project ROW.

Desert tortoise burrows on or near the edge of the Project ROW may collapse from the vibration of heavy equipment and vehicles during construction. Burrows that are unoccupied at the time may be destroyed, which could affect tortoises in the future if shelter from the heat and sun in those burrows is no longer available, or if tortoises are exposed for extended time to predators. Unauthorized handling or other human contact could transmit diseases to the desert tortoise.

The presence of BLM- and USFWS-approved desert tortoise monitors, implementation of Best Management Practices (BMPs), and USFWS desert tortoise protection measures during the construction should ensure that most desert tortoises are avoided or moved from harm's way.

The clearance surveys within 48 hours prior to installation of exclusionary fencing shall reduce the likelihood of desert tortoises being trapped or crushed in their burrows. If the weather is amenable, desert tortoises may move into the work area between the time of the survey and the ground-disturbing work during installation of the tortoise exclusionary fencing. The flagging of desert tortoise burrows and the Authorized Biologist and desert tortoise monitor teams shall ensure that no burrows are inadvertently destroyed. Also, burrows that cannot be avoided (such as those within the Project ROW) shall be checked immediately before they are disturbed by construction activities to remove any desert tortoises.

Relocation of tortoises offsite on public lands within their home range is not expected to negatively impact the small population of tortoises to the south of the site if relocation were necessary. CES shall adhere to all protective measures defined in the BO.

Maintenance activities along the ROW, such as driving along existing access roads, walking the perimeter of the Project site during exclusionary fence inspections, and any isolated fence replacement activities, could result in injury or death of desert tortoise that manage to move onsite. Equipment access to damaged areas of the exclusionary fence shall stay within the ROW to minimize potential of desert tortoise encounters. For O&M activities requiring surface disturbance, CES shall implement the construction protective measures to minimize encounters with desert tortoises during O&M activities.

5.3. INDIRECT EFFECTS

CES would clear ground in the Project ROW to conduct the Project, resulting in loss of habitat. Some vegetation within the Project ROW would be permanently removed.

Installation of the protective exclusionary fencing shall be confined to the BLM ROW. Facility connection to the existing power lines off ROW from the south side of Foothill Road to the north side of Foothill Road (approximately 20 feet wide) along Santa Fe Fire Road shall not impact desert tortoise habitat. Access into the Project ROW shall occur within existing roadways. No loss of habitat shall occur. Therefore, no new disturbance to desert tortoise habitat shall occur offsite.

Even minimal disturbance along the existing access roads may be prone to colonization by non-native species. The displacement of native vegetation with non-native vegetation is expected to be negligible, but the spread of these species could be enhanced by Project activities. CES's application of its restoration and weed control plan should prevent outbreaks of non-native vegetation, such as Sahara mustard, into areas that do not yet have this species.

BLM has estimated that a maximum of 512.7 acres of desert tortoise habitat may be newly disturbed during the Project construction. The Project site contains 5.3 acres of non-desert tortoise habitat. BLM expects no more than 512.7 acres of new disturbance because Project activities would remain within the exclusionary fencing. No new access roads shall be constructed.

The impediment of tortoise movement during foraging and breeding migrations, as well as habitat fragmentation, from the proposed Project shall be minimal because of the relatively small size of the Project site.

5.4. CUMULATIVE EFFECTS OF THE ACTION

USFWS is obligated per 50 CFR 402.02 to consider in the BO the effects of future State, tribal, local, or private actions that are reasonably certain to occur concurrently in the Action Area. Future Federal actions that are unrelated to CES's proposed action shall not be considered in the BO, but shall instead require separate consultation pursuant to Section 7 of ESA. Cumulative effects occur when individual impacts from each project considered would have an incremental impact to the environment.

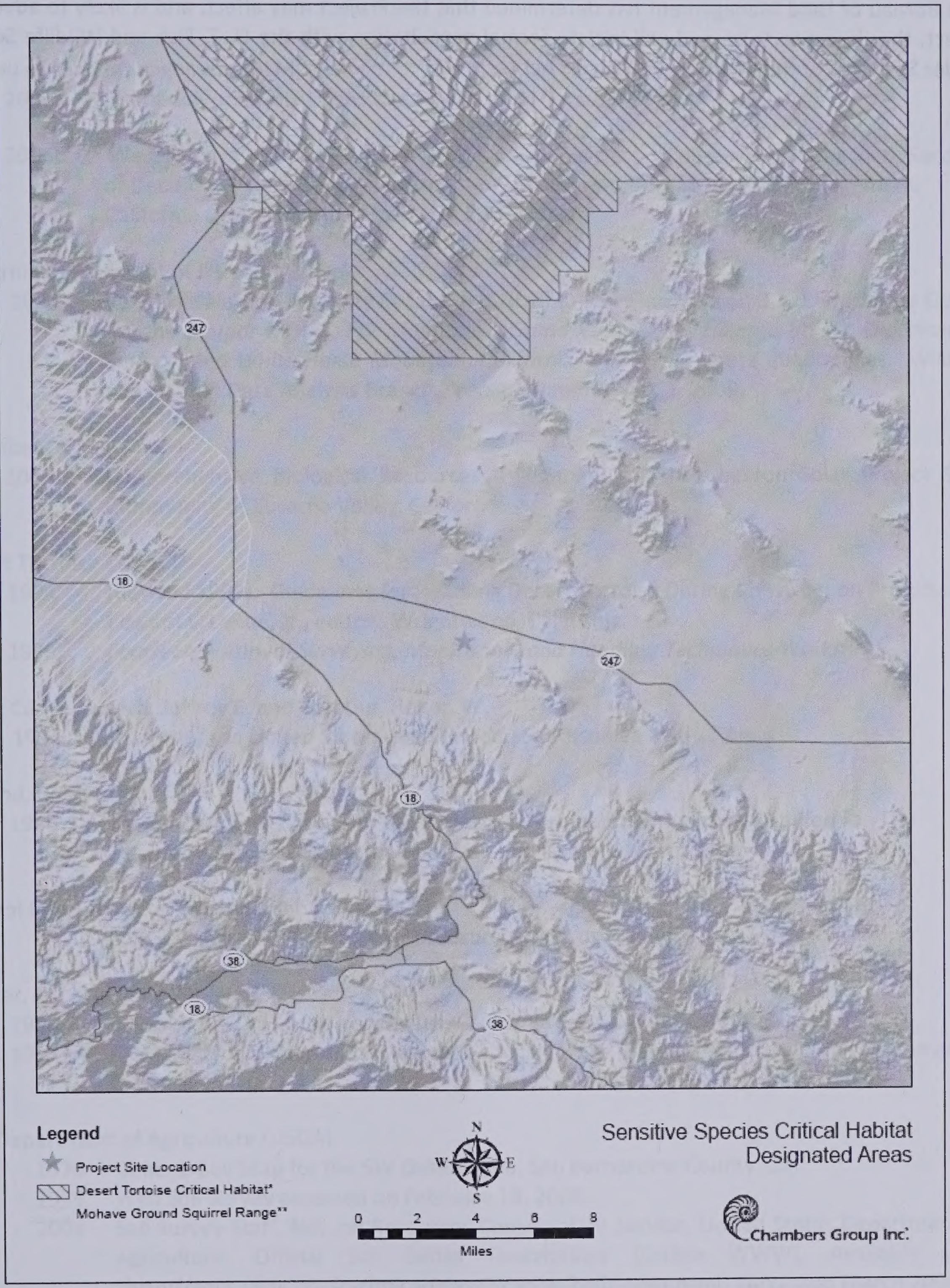
There currently is one reasonably foreseeable cumulative project action proposed in the immediate Project area. The Green Path North project is a renewable electricity transmission line proposed jointly by the Los Angeles Department of Water and Power, Imperial Irrigation District, and Southern California Public Power Authority. The project would connect to renewable energy resources from an area near Hesperia to around Palm Springs. The proposed route has not been identified yet; several alternatives are being considered and project lengths vary between alternatives. The project would involve the construction and operation of an up to 800 MW high-voltage transmission line with capability for future expansion. New access roads and microwave communication sites will be required.

One of the Green Path North alternative project routes runs north of and parallel to the California Desert Conservation Area Boundary. This route lies within 4 miles at the shortest distance south of the proposed Chevron Project. Because the Green Path North project currently is in the early stages of permitting and planning, there would be no cumulative impacts associated with the construction of the Phase I construction of this project. Based on the timing of Phase II, both projects may have construction activities with potential cumulative impacts to desert tortoise occurring between the projects. The Green Path North project may impact wildlife, including mortality and habitat loss, from grading, construction, or vehicle use. Although each project may locally affect wildlife corridors or passage, the proposed Project is expected to have minimal impacts and would not have a cumulative effect with the Green Path North project. No critical habitat is identified between the projects; therefore, no cumulative impacts to critical habitat would occur.

The operation and maintenance of the proposed Project is likely to occur during the construction of the Green Path North project. Because impacts to desert tortoise are minimized by the Project exclusionary fence, potential impacts to desert tortoise between the projects would be based on the Green Path North construction activities. With the Project protective measures and anticipated protective measures by the Green Path North project, encounters with desert tortoises within the projects vicinity are expected to be minimal.

Figure 3 Designated Critical Habitat

20047 - March 2009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Legend
★ Project Site Location
▨ Desert Tortoise Critical Habitat*
Mohave Ground Squirrel Range**
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Miles
Sensitive Species Critical Habitat Designated Areas
Chambers Group Inc.

*U.S. Fish and Wildlife Service, Critical Habitat Data. Federal Register Vol. 59, No. 26, pg. 5820, February 8, 1994
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SECTION 6.0 – DETERMINATION OF EFFECT

The Bureau of Land Management has determined that the Project may affect, and is likely to adversely affect, the desert tortoise and will initiate formal consultation with the U. S. Fish and Wildlife Service under Section 7 of the Endangered Species Act.

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Appendix D
Comprehensive Biological Resources Assessment

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COMPREHENSIVE BIOLOGICAL RESOURCES ASSESSMENT FOR THE CHEVRON SOLAR PROJECT SITE COMMUNITY OF LUCERNE VALLEY, CALIFORNIA

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SECTION 1.0 – INTRODUCTION

Chambers Group, Inc. (Chambers Group) was retained by Chevron Energy Solutions (CES) to conduct a variety of biological surveys and a literature review for the proposed 49 megawatt (MW) solar photovoltaic generating station (Project). The Plan of Development has been submitted to the Bureau of Land Management (BLM) Barstow Field Office in connection with BLM right of way application #CACA 49516, per guidance from the BLM's solar energy development policy, Instruction Memorandum No. 2007-097 (IM 2007-097). This report provides the results of field surveys and literature research conducted to describe the environmental setting of the project site. These results will provide the basis for the analysis of the potential for project impacts to biological resources, which is conducted to satisfy the National Environmental Policy Act (NEPA).

1.1. PROJECT LOCATION

The Project site, comprising approximately 516 acres, is located just south of CA-247, approximately 8 miles east of the junction of Barstow Road and Old Woman Springs Road, east of the community of Lucerne Valley in San Bernardino County, California (Figure 1). The site is located south of Foothill Road and is bordered by Donaldson Road on the west and a drainage that runs approximately 1,300 feet east of Santa Fe Fire Road on the east. The site is within the U.S. Geological Survey (USGS) Cougar Buttes, California 7.5-minute topographic quadrangle in Sections 19, 20, 29, and 30 of Township 4 North, Range 2 East and in Section 24 of Township 4 North, Range 1 East (Figure 2). The elevation range at the site is between approximately 3,000 and 3,120 feet above mean sea level (amsl).

1.2. PROJECT DESCRIPTION

The development plan describes a preference for a one-year permitting period using the process detailed in the NEPA, with the U.S. Department of Interior BLM as the designated lead agency coordinating all federal permitting activities, and State and local permits coordinated through the appropriate agencies. The Project will comply with the requirements of the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), Sections 401, 402, and 404 of the Clean Water Act (CWA), Section 106 of the National Historic Preservation Act, and the American Indian Religious Freedom Act. The build phase of construction is scheduled to begin in 2010. California utilities will need in excess of 50,000 MW/yr of new renewable energy generation capability over the next 10 years to meet the state's clean energy needs. It is expected that at least 5,000 MW of new solar power will be required to meet this need, and that this amount could grow to nearly 10,000 MW. The proposed Project will supply renewable energy to meet these important mid- and long-term needs. In an effort to meet this need, CES and its development partners propose to design, construct, operate, and maintain a photovoltaic generating station, interconnecting to Southern California Edison's (SCE) 33 kV distribution system. CES selected this BLM site for its excellent solar radiation, proximity to potential customers, and access to existing electric transmission. The ROW encompasses the solar field, control and maintenance building, and the substation, for a total of approximately 516 acres.

The general facility dimensions of the Project include: substation/switchyard, 50 feet by 200 feet (0.2 acre); warehouse/control building, 150 feet by 30 feet by 12 feet (0.1 acre); power line within site area, connecting to the existing power lines along Foothill Road, 20 feet by 3 miles (5 acres); access road within site area, 20 feet by 3 miles (7 acres); solar array for Phase 1 (210 acres); solar array for Phase 2,

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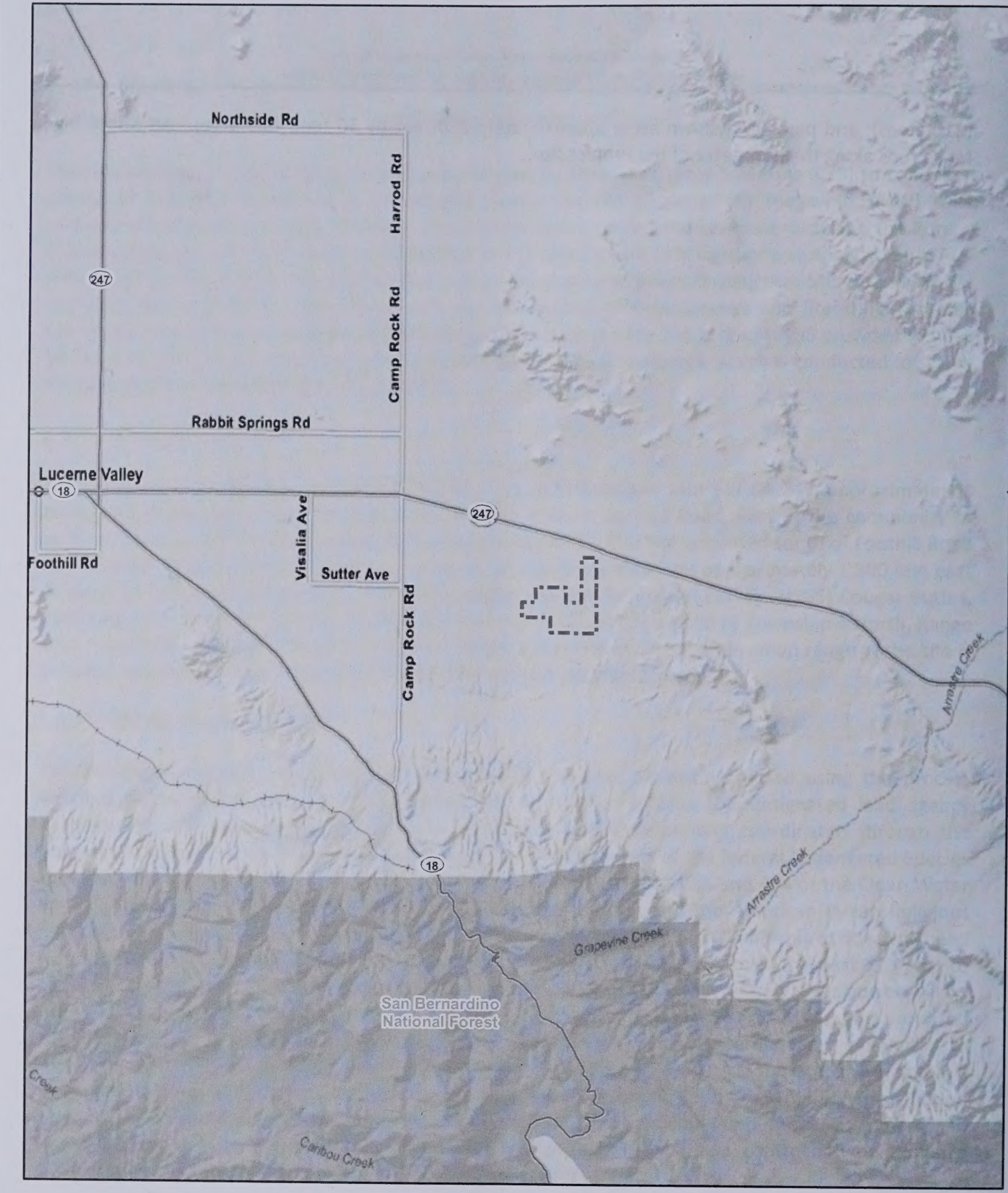
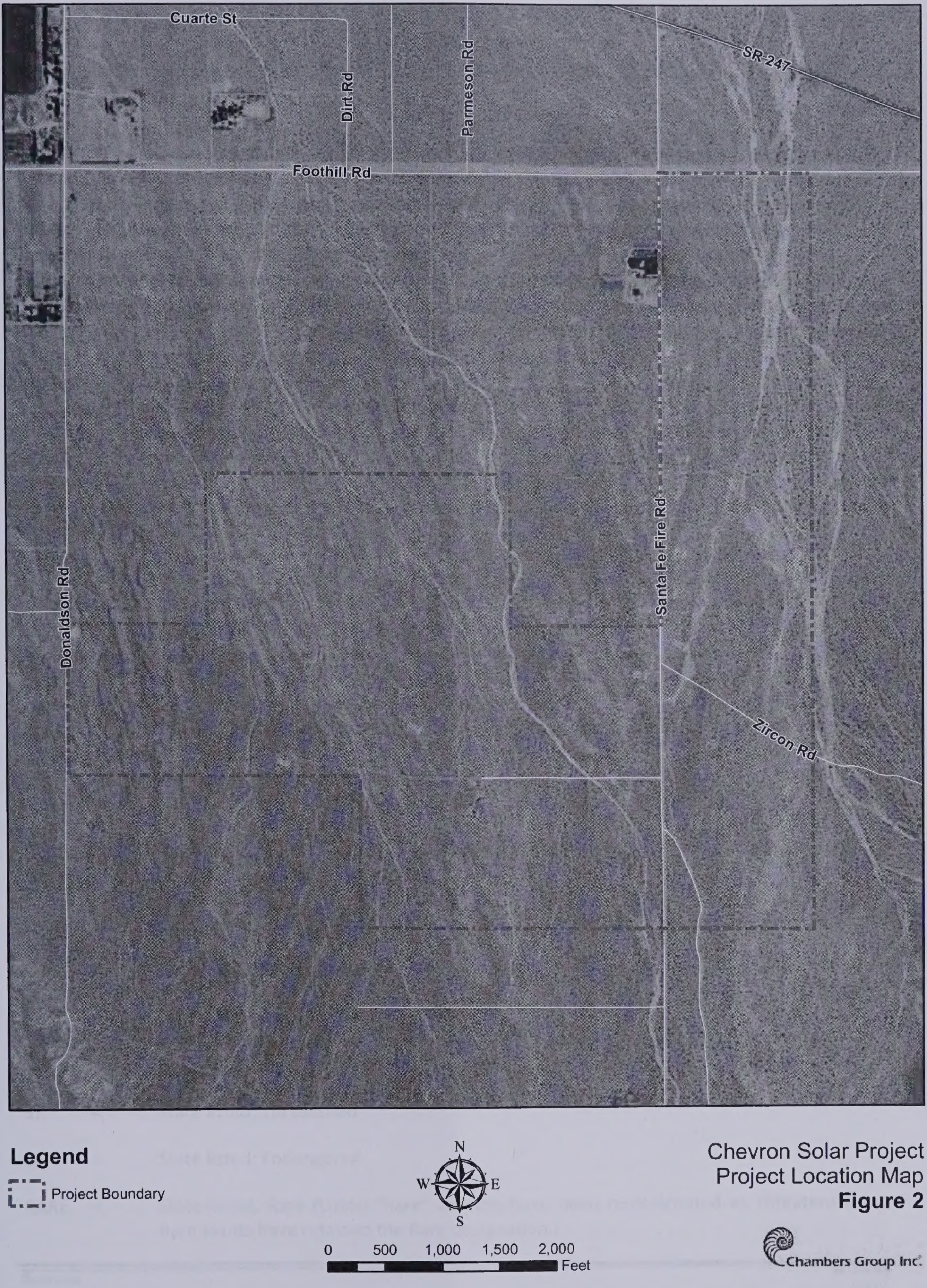


Chevron Solar Project
Project Vicinity Map
Figure 1

Chambers Group Inc.



Legend

▭ Project Boundary

Chevron Solar Project
Project Location Map
Figure 2

Chambers Group Inc.

Cougar Buttes 7.5 minute USGS Quad Map
Sections 19, 20, 29, & 30, Township 4N, Range 2E

Biological Resources

Chambers Group conducted a literature review, reconnaissance-level habitat assessment, protocol-level focused plant survey, weed mapping, presence/absence survey for desert tortoise and Phase II burrow and burrowing owl survey, and breeding season avian point count survey for the proposed Project. The reconnaissance-level survey occurred in March 2009; a subsequent protocol-level focused plant survey was conducted by qualified botanists during the appropriate blooming periods for special status plant species in May 2009, a Mohave ground squirrel site assessment was conducted in May 2009, and a subsequent protocol-level focused desert tortoise and burrowing owl survey was conducted in June 2009.

SECTION 2.0 – METHODOLOGY

2.1. LITERATURE REVIEW

Prior to performing the field surveys, available documentation, reports, and literature relevant to the Project site were reviewed. The most recent records of the California Natural Diversity Database (CNDDB) managed by the California Department of Fish and Game (CDFG) (CDFG 2009) and the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2009) were reviewed for the relevant quadrangles containing and surrounding the Project site, excluding those quadrangles to the south of the project quadrangle where elevation changes result in different vegetation communities, habitats, and microhabitats than found on the project site (i.e., *Cougar Buttes, Fry Mountains, Grand View Mine, Lucerne Valley, Old Woman Springs,* and *White Horse Mountain,* California USGS 7.5 minute quadrangles). These databases contain records of reported occurrences of federal- or state-listed as endangered or threatened or proposed endangered or threatened species, California Species of Special Concern (CSC), CNPS-listed species, or otherwise sensitive species, vegetation community, or habitat that may occur within or in the immediate vicinity of the Project site. Species designated as sensitive by the BLM (BLM 2006) also were included in the review.

For the purposes of this report, plant and animal species of elevated conservation concern were emphasized in field and literature research. These species include those listed by either the state of California (i.e., the CDFG) or the federal government (i.e., the USFWS) as either threatened or endangered; those considered "sensitive" by the BLM; and those listed as "Species of Special Concern" by the CDFG. Additionally, some non-government organizations maintain "watch" lists that are considered by the reviewing agencies and the public when evaluating a project's potential impacts to natural resources. Accordingly, species included on these lists also were considered and collectively referred to herein as "special status species."

Status Codes

The following information is a list of abbreviations used to help determine the significance of biological resources potentially occurring on the Project site.

Federal

FE = Federally-listed; Endangered

FT = Federally-listed; Threatened

State

ST = State listed; Threatened

SE = State listed; Endangered

RARE = State-listed; Rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)

CSC = State Species of Special Concern

California Native Plant Society (CNPS)

List 1A = Plants presumed extinct in California.

List 1B = Plants rare and endangered in California and throughout their range.

List 2 = Plants rare, threatened or endangered in California but more common elsewhere in their range.

List 3 = Plants about which we need more information; a review list.

List 4 = Plants of limited distribution; a watch list.

CNPS Extensions

0.1 = Seriously endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).

0.2 = Fairly endangered in California (20-80 percent occurrences threatened).

0.3 = Not very endangered in California (less than 20 percent of occurrences threatened).

Bureau of Land Management (BLM)

BLM S = Species designated as sensitive by the BLM California State Office.

2.2. SOILS

Before conducting the surveys, soil maps were referenced online for San Bernardino County to determine the types of soil found on the site. Soils were determined in accordance with categories set forth by the U.S. Department of Agriculture (USDA) Soil Conservation Service and by referencing the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2008), and the 1970 General Soil Map for the SW Desert Area, San Bernardino County.

2.3. VEGETATION

A reconnaissance level field survey was conducted by Chambers Group biologists Heather Clayton and Paul Morrissey on the Project site in order to identify any potential for occurrence of special status plant species, vegetation communities, or habitats to support sensitive wildlife species. This survey was conducted between 0830 and 1612 hours on March 16, 2009 on foot throughout the Project site as well as by car along dirt roads, such as Santa Fe Fire Road, Zircon Road, Foothill Road, Donaldson Road, and other unnamed dirt roads within and adjacent to the Project site. Photographs of the Project site were recorded to document existing conditions.

Plant communities on the Project site were identified, qualitatively described, and mapped onto a 1:600 aerial photograph. Plant communities were determined in accordance with the categories set forth in authorities on vegetation types. The Desert Wash community onsite resembles the Mojave Wash Scrub community described in Holland (1986), while the more densely vegetated portions of the Project site have been described according to Sawyer and Keeler-Wolf (1995). These two authorities on vegetation types sometimes overlap in their community descriptions, however, often one authority will better describe a community than a second authority. Plants of uncertain identity were collected and subsequently identified from keys, descriptions, and illustrations in Abrams (1923, 1944, and 1951), Abrams and Ferris (1960), Baldwin et al. (2002), Ingram (2008), MacKay (2003), and Munz (1974). Plant nomenclature follows that of *The Jepson Desert Manual; Vascular Plants of Southeastern California* (Baldwin et al. 2002). A list of the plant species observed during the reconnaissance-level and protocol-level focused surveys is presented in Appendix A.

A special status species was considered to potentially occur in a project area if its known geographic range includes part of the project area or an adjacent USGS 7.5-minute quadrangle and/or if the general habitat or environmental conditions (e.g., soil type, etc.) required for the species were present. The criteria for evaluating a species potential for occurrence (PFO) on a site is presented in Table 1. Based on the literature search and results of the reconnaissance survey, sensitive species were determined to have a potential to occur onsite; protocol-level focused plant surveys were recommended within the Project boundary. Chambers Group botanists Rebecca Alvidrez, Nichole Cervin, Heather Clayton, Jenny McGee, and Maya Mazon conducted the protocol-level focused plant survey between May 4 and 14, 2009 (see Appendix B for resumes). This survey was conducted in accordance with Botanical Survey Guidelines of the California Native Plant Society (CNPS 2001). The following guidelines were in adhered to during the survey:

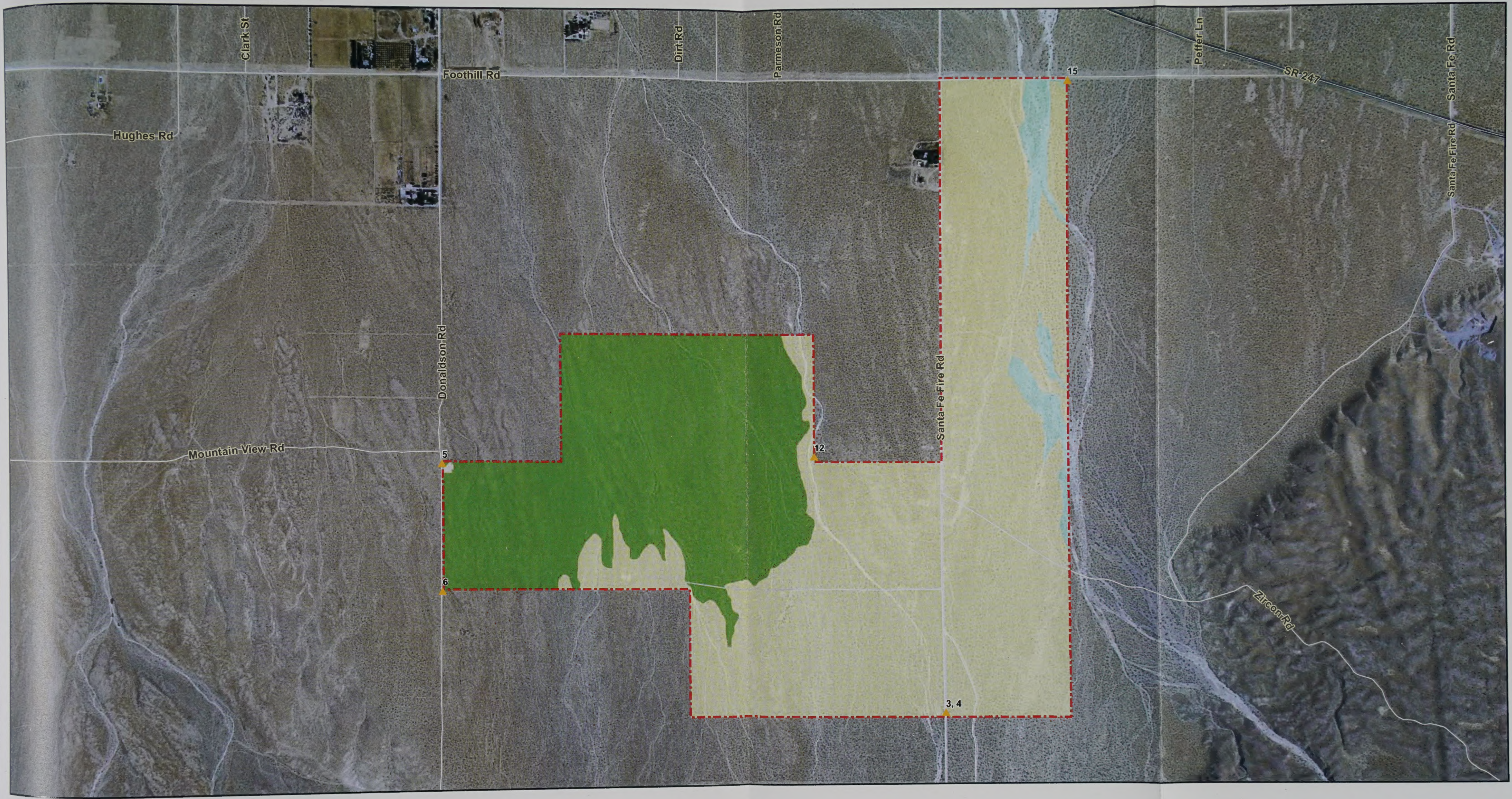
- Professional botanists with knowledge of plant taxonomy and plant community ecology and classification conducted the survey;
- Botanists were familiar with the plant species in the area and had previous experience conducting surveys for rare plants;
- Survey was conducted at the appropriate time when plants were both evident and identifiable (i.e., blooming periods);
- Botanists walked narrow transects using sub-meter technology to ensure 100 percent coverage of the Project area was attained; and
- Local reference sites were visited when available to confirm habitat suitability for special status plant species.

Table 1 Criteria for Evaluating Special Status Plant Species Occurrences

PFO	CRITERIA
Absent:	Species was not observed during protocol level focused surveys conducted at an appropriate time for identification of the species or species is restricted to habitats or environmental conditions that do not occur within the site.
Low:	Historical records for this species do not exist within the immediate vicinity (approximately 5 miles) of the site and/or habitats or environmental conditions

PFO	CRITERIA
	needed to support the species are of poor quality.
Moderate:	Either a historical record exists of the species within the immediate vicinity of the site (approximately 5 miles) and marginal habitat exists on the site, or the habitat requirements or environmental conditions associated with the species occur within the site, but no historical records exist within 5 miles of the site.
High:	Both a historical record exists of the species within the site or its immediate vicinity (approximately 5 miles) and the habitat requirements and environmental conditions associated with the species occur within the site.
Present:	Species was detected within the site at the time of the survey.

The protocol level focused plant survey consisted of walking the entire Project site and recording all plant species observed. To ensure the detection of rare plants, the botanists were organized into a single horizontal line and formed adjacent belt transects by having each botanist spaced apart from the next at a distance to survey 15 feet on each side of their own transect. The edge of each transect abutted the adjacent transect, leaving no gaps between each belt for 100 percent coverage. A Thales Mobile Mapper sub-meter GPS unit was used to ensure the lead botanist maintained an accurate position along the transect line. Each botanist walked in the direction toward the agreed upon endpoint within their respective belt transect in a slightly meandering pattern for maximum and overlapping coverage. When suitable microhabitats were encountered or where small plants resembling special status plant species were present, the botanists would stop and carefully scan the microhabitat to positively identify each plant. Transect lines were overlaid onto an aerial photograph showing the line walked by the lead botanist (Figure 3).



Legend

Vegetation Communities

- 🟨 Creosote Bush-White Bursage Series
- 🟦 Desert Wash
- 🟩 White Bursage Series
- ⬜ Disturbed (Sparsely Vegetated)

- ▭ Project Site Boundary
- ▲ Photo Locations

Chevron Solar Project
Vegetation Communities Map
Figure 3

Chambers Group Inc.

Image Source: National Agriculture Imagery Program (NAIP), August 2005

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2.3.1 Non-Native Invasive Weed Mapping

Non-native invasive weeds are opportunistic plants that readily colonize disturbed areas and that can adversely affect the habitats they invade economically, environmentally, or ecologically. These plant species are able to exclude or out-compete desired native species and lead to a decrease in overall species diversity. Non-native invasive weeds are plant species arbitrarily defined by law as being especially undesirable, troublesome, and difficult to control. The definition will vary according to legal interpretation (Ogle et al. 2001). The BLM and other federal, state, and local agencies recognize that there are species, such as cheat grass (*Bromus tectorum*) and other grass species (*Schismus* sp.), that because of their widespread distribution are not considered feasible for general control in the Mojave desert.

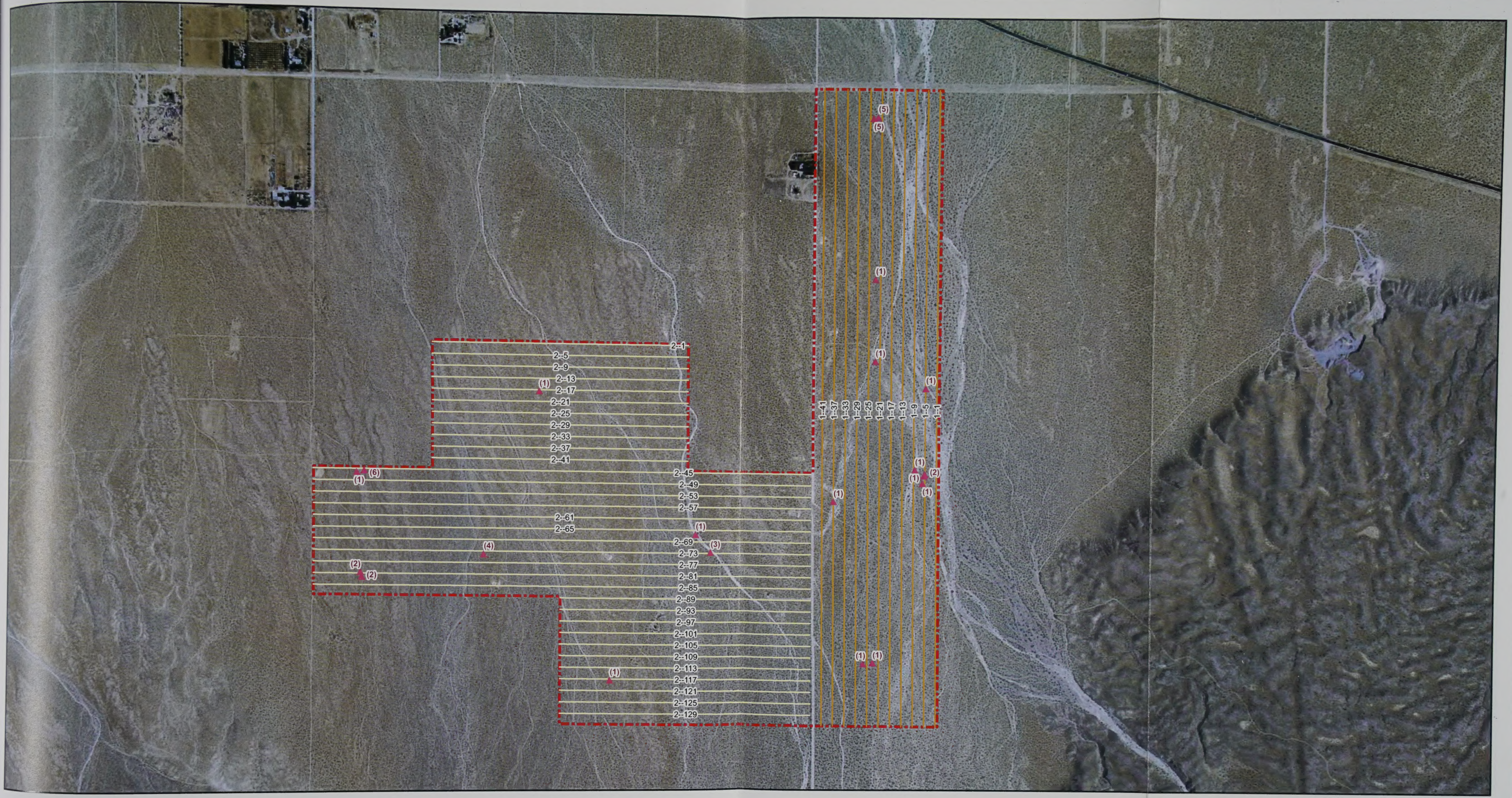
Under California Food and Agriculture Code, Sections 7270-7224, the California Commissioner of Agriculture is granted the authority to investigate and control non-native invasive weeds. Currently, California has 246 listed non-native invasive weeds, 38 of which are problematic within the desert provinces of southern California. Those weeds deemed non-native invasive in the desert provinces by the California Invasive Plant Council (Cal-IPC 2006), which are of most concern to the BLM and have a potential to occur onsite, are included in Table 2.

A field inventory for non-native invasive weed species was conducted in conjunction with the protocol-level focused plant survey to identify existing non-native invasive weed infestations within the Project boundary. While botanists walked transects looking for special status plant species, populations of those non-native invasive weed species listed in Table 2 were recorded between the transect lines. Because Sahara mustard (*Brassica tournefortii*) is particularly invasive, BLM requested that GPS points of this species be taken to document relative population densities on federal lands. The botanists recorded the locations of Sahara mustard onsite. Species in Table 2 that were observed onsite have been recorded according to occurrences along the individual transect lines shown on Figure 4.

Table 2 Non-Native Invasive Weeds Potentially Occurring Onsite

Scientific Name	Common Name
ANGIOSPERMS (DICOTYLEDONS)	
BRASSICACEAE	**MUSTARD FAMILY**
Brassica tournefortii	Sahara mustard
Sisymbrium irio	London rocket
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
Salsola tragus	Russian thistle
GERANIACEAE	**GERANIUM FAMILY**
Erodium cicutarium	red-stemmed filaree
TAMARICACEAE	**TAMARISK FAMILY**
Tamarix ramosissima	Mediterranean tamarisk, salt cedar
ANGIOSPERMS (MONOCOTYLEDONS)	
POACEAE	**GRASS FAMILY**
Bromus madritensis ssp. *rubens*	foxtail chess
*Bromus tectorum**	cheat grass
*Schismus barbatus**	Mediterranean schismus

*** Populations were not mapped onsite as these species are not feasible for general control.**



Legend

🟥 Project Site Boundary

▲ wild turnip (*Brassica tournefortii*)

(#) Number of Occurrences

Survey Transects

Zone 1

Zone 2

N
W E
S

1:12,000

0 250 500 1,000 1,500 2,000 Feet

Chevron Solar Project
Transect & Noxious Weed Location Map
Figure 4

Chambers Group Inc.

Image Source: National Agriculture Imagery Program (NAIP), August 2005

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2.4. WILDLIFE

A reconnaissance-level wildlife survey was conducted by Chambers Group biologists Heather Clayton and Paul Morrissey on the Project site on March 16, 2009 (see resumes in Appendix B). All wildlife and wildlife sign observed (e.g., tracks, scat, carcasses, burrows, and excavations) and detected (e.g., vocalizations) were recorded. Additional survey time was spent in those habitats most likely to be utilized by wildlife (e.g., undisturbed native habitat, wildlife trails, etc.) or in habitats with the potential to support special-status species. Notes were made on the general habitat types, species observed, and the conditions of the site. A list of the wildlife species observed during the reconnaissance-level and protocol-level focused surveys is included as Appendix C.

2.4.1 Desert Tortoise Surveys

The desert tortoise is federal- and state-listed as threatened, and the proposed Project site is within the known range of the desert tortoise; however, the proposed Project site is not within federally designated critical habitat for desert tortoise. Desert tortoise surveys were conducted by qualified biologists (see resumes in Appendix B) in accordance with protocols set forth by the U.S. Fish and Wildlife Service (USFWS) for any non-federal action that may occur within the range of the desert tortoise (USFWS 1992). Chambers Group conducted protocol level focused surveys for the desert tortoise on March 24 to 27, March 31 to April 3, and April 7 to 10, 2009.

The survey was conducted on foot over the entire Project site utilizing 30-foot (approximately 10-meter) belt transects to provide 100 percent coverage on the site and within a 500 foot buffer, due to burrowing owl surveys that were conducted concurrently. In areas with a high density of tortoise sign or where tortoises were encountered, buffer transects were extended up to 1,200 feet from the edge of the Project site, particularly in the southeast and southwest areas of the Project site. The zone of influence (ZOI) survey was conducted in the areas directly adjacent to and surrounding the Project site where suitable desert tortoise habitat exists and may potentially be directly or indirectly affected by Project operations. The ZOI survey included single line transects at 600 feet, 1,200 feet, and 2,400 feet parallel to the edge of the Project boundaries in accordance with protocol. Habitat conditions for each transect were documented, including vegetation communities, soil types, landscape usage, topography, weather conditions, and the amount of existing human-caused disturbance. All sign of desert tortoises, including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks were recorded on standardized data sheets (Appendix D). If a burrow was observed, a mirror was used to reflect sunlight into the burrow to visually determine if desert tortoise were present. Locations of all sign were recorded using GPS units. Photographs were taken of transect habitat characteristics, desert tortoise encounters, and desert tortoise sign (Appendix E).

2.4.2 Burrowing Owl Surveys

The burrowing owl is a BLM sensitive species and CSC, and habitat for the burrowing owl exists on the Project site. A Phase II Burrow and Burrowing Owl Survey was conducted in accordance with the Burrowing Owl Survey Protocol and Mitigation Guidelines set forth by the California Burrowing Owl Consortium (1993) and the CDFG Staff Report (1995) concurrently with the desert tortoise survey.

Belt transects spaced at 30 feet (approximately 10 meters) were utilized to achieve 100 percent coverage on the site and within a 500 foot buffer (approximately 150 meters) around the site. Surveys protocol level focused on burrowing owl sign throughout the Project area and the entire ZOI survey areas for desert tortoise. All sign of burrowing owl activity (i.e., whitewash, prey remains, pellets, burrows, scratch marks, or feathers) were recorded on data sheets (Appendix D). Any suitable or potential burrow sites also were recorded. The location of any burrowing owls and/or sign was recorded using GPS units. Photographs of detected sign are included as Appendix E.

A second protocol level focused survey for burrowing owl was conducted on June 26, 2009 at six locations that exhibited burrowing owl sign from the previous March/April surveys. The biologists visited the six locations in the early morning hours when temperatures were favorable for this species.

2.4.3 Avian Point Count Survey

The avian point count surveys consisted of four point count "transects" conducted one week apart for four consecutive weeks in spring 2009 (a second set of point counts will be conducted in the winter between November and January). Chambers Group biologists Paul Morrissey, Kris Alberts, and Laura Gorman conducted the avian point count survey transects on March 26 and 27 (Transect #1), April 1 and 2 (Transect #2), April 9 (Transect #3), and April 17 (Transect #4), 2009. All point counts were conducted between the hours of 0645 and 0930. One avian point count transect was conducted per square mile, with a total of eight point count stations per transect (please see Appendix F). The point count station locations were linearly spaced at least 250 meters apart in areas where birds were expected to occur, including densely vegetated areas such as washes. Parameter constraints for the surveys included temperatures over 85 degrees Fahrenheit and winds above 20 miles per hour.

Each point count was conducted over a period of 10 minutes within a 100-meter radius. When conducting each point count transect, the biologists proceeded to a station and remained quiet for approximately five to ten minutes to allow birds to adjust to the presence of the biologist. During this time period, the temperature, wind, cloud cover, location, and habitat type was recorded. After equilibration, the biologist surveyed the species of birds present within the 100-meter area. The biologist moved around within each sampling station to enhance the possibility of identifying birds. In addition, sounds such as "pishing" were used in an attempt to draw birds into view. The species and number of birds observed at each station were recorded on standardized data sheets. All incidental bird observations were also recorded to acquire a complete inventory of birds present in the Project area. Incidental observations included birds observed or detected outside of the 10-minute point count survey period and/or outside the 100-meter survey radius.

2.5. WETLAND AND JURISDICTIONAL DELINEATION

2.5.1 Jurisdictional Criteria Review

Prior to beginning the field delineation, high-resolution aerial photographs, National Wetlands Inventory (NWI) maps, USGS topographic maps, and Google Earth images were examined to determine the potential areas of USACE/RWQCB/CDFG jurisdiction on the Proposed Project.

As prescribed by the 1987 Wetland Manual and Arid West Supplement, all available lists of hydric soils were referenced to identify any occurrence of hydric soils listed within the Project site. The national, state, and local hydric soils lists were used.

Soil maps were referenced online for San Bernardino County to determine the types of soil found on the site. Soils were determined in accordance with categories set forth by the USDA Soil Conservation Service and by referencing the USDA NRCS Web Soil Survey (USDA 2008), and the 1970 General Soil Map for the SW Desert Area, San Bernardino County.

United States Army Corps of Engineers Jurisdictional Criteria

The U.S. Army Corps of Engineers (USACE) asserts jurisdiction over traditional navigable waters (TNW), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries. Pursuant to Section 404 of the CWA, the USACE regulates the discharge of dredged and/or fill material into waters of the United States. Waters of the United States include navigable waterways and wetlands adjacent to navigable waterways, and non-navigable waterways and wetlands adjacent to non-navigable waters that are contiguous with navigable waterways. The term "waters of the United States" is defined by 33 CFR Part 328 and currently includes (1) all navigable waters (including all waters subject to the ebb and flow of the tide), (2) all interstate waters and wetlands, (3) all other waters (e.g., lakes, rivers, intermittent streams) that could affect interstate or foreign commerce, (4) all impoundments of waters mentioned above, (5) all tributaries to waters mentioned above, (6) the territorial seas, and (7) all wetlands adjacent to waters mentioned above.

Wetlands are defined by 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the USACE published a manual to guide its field personnel in determining jurisdictional wetland boundaries. This manual was amended in 2006 by the Arid West Supplement. Currently, the 1987 Wetland Manual and the 2006 Arid West Supplement provide the legally accepted methodology for identification and delineation of USACE-jurisdictional wetlands in southern California.

The methodology set forth in the 1987 Wetland Manual and updated by the Arid West Supplement generally requires that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area must exhibit at least minimal hydric characteristics. While the manual provides great detail in methodology and allows for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the 1988 National List of Plant Species that Occur in Wetlands [Reed 1988]). These plants are known as "hydrophytic vegetation."
- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions). Such soils, known as "hydric

soils," have characteristics that indicate they are developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season.

- Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5 percent of the growing season during a normal rainfall year. For most of low-lying southern California, 5 percent of the growing season is equivalent to 18 days.

Although the most reliable evidence of wetland hydrology may be provided by a gauging station or groundwater well data, such information is often limited for most areas. Thus, most hydrologic indicators are those that can be observed during field inspection. The following indicators provide some evidence of hydrology: (1) standing or flowing water; (2) water-logged soils during the growing season; (3) water marks present on trees or other objects associated with a drainage; (4) drift lines, or small piles of debris oriented in the direction of water movement through an area; (5) shelving; (6) destruction of terrestrial vegetation; and (7) thin layers of sediments deposited on leaves or other objects. The Arid West Supplement of 2006 includes all of these indicators as well as surface soil cracks, inundation visible on aerial imagery, salt and biotic crusts, aquatic invertebrates, hydrogen sulfide odor, evidence of oxidation/reduction reactions within the soil profile, and several others. In general, a combination of hydrologic indicators indicates a more defined hydrological system.

In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, including intermittent Relatively Permanent Water (RPW) streams, extend to the OHWM which is defined by 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

On January 9, 2001, the U.S. Supreme Court ruled that the USACE jurisdiction does not extend to previously regulated isolated waters (in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* - SWANCC), including but not limited to isolated ponds, reservoirs, and wetlands. Examples of isolated waters that are affected by this ruling include vernal pools, stock ponds, lakes (without outlets), playa lakes, and desert washes that are not tributary to navigable or interstate waters or to other jurisdictional waters.

A joint guidance by the U.S. Environmental Protection Agency (EPA) and the USACE was issued on June 5, 2007, to clarify circumstances where a CWA Section 404 permit would be required before conducting activities in wetlands, tributaries, and other waters. This guidance is consistent with the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208 (2006)) ("Rapanos"), which address the jurisdiction over waters of the United States under the Clean Water Act (33 U.S.C. §1251 et seq.). This Rapanos guidance does not supersede the 2003 guidance interpreting SWANCC, and the agencies will continue to evaluate jurisdiction over isolated waters on a case-by-case basis.

The USACE will continue to assert jurisdiction over TNWs, wetlands adjacent to TNWs, non-navigable tributaries of TNW that are (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries.

The USACE will use fact-specific analysis to determine whether waters have a significant nexus with traditional navigable water for non-navigable tributaries that are not relatively permanent (non-RPW), wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to, but that does not directly abut, a relatively permanent non-navigable tributary. According to USACE, "*a significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters,*" including consideration of hydrologic and ecologic factors. A primary component of this determination lies in establishing the connectivity or non-connectivity of the subject drainages to a TNW; therefore, the drainages of the project site must be analyzed from their origins to their terminus for any USACE jurisdictional determination.

In May 2007, the USACE and EPA jointly published and authorized the use of the *Jurisdictional Determination Form Instructional Guidebook* (USACE 2007). The form and guidebook define how to determine if an area is USACE jurisdictional, and if there is a significant nexus per the Rapanos decision. A nexus is defined as some property of a drainage that has an effect on the physical, chemical, or biological integrity of a downstream TNW. A nexus must have more than insubstantial and speculative effects on the downstream TNW to be considered a significant nexus.

Regional Water Quality Control Board Jurisdictional Criteria

The State of California (State) regulates discharge of material into waters of the State pursuant to Section 401 and 402 of the CWA and the California Porter-Cologne Water Quality Control Act (California Water Code, Division 7, §13000 et seq.). Porter–Cologne reserves the right for the State of California to regulate activities that could affect the quantity and/or quality of surface and/or ground waters, including isolated wetlands, within the State. Waters of the State determined to be jurisdictional for these purposes require, if impacted, waste discharge requirements and a 401 Certification (in the case of the required USACE permit). The State Water Resources Control Board (SWRCB) and the local RWQCB are the relevant permitting agencies. Limits of jurisdiction include wetland boundaries and the OHWMs of TNWs, RPWs, and non-RPWs.

California Department of Fish and Game Jurisdictional Criteria

Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Game Code, the CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife. Potential CDFG jurisdictional riparian habitats were evaluated using the guidance described in *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (CDFG 1994).

CDFG defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs." CDFG limits of jurisdiction include the maximum extents of the uppermost bank-to-bank distance or riparian vegetation dripline.

CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFG Legal Advisor has prepared the following opinion:

- Natural waterways that have been subsequently modified and that have the potential to contain fish, aquatic insects, and riparian vegetation will be treated like natural waterways; and
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses should be treated as natural waterways.

Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions.

2.5.2 Field Survey

Field surveys were conducted from March 9 to March 17, 2009, by Chambers Group biologists Paul Morrissey and Saraiah Skidmore. Drainages were mapped during protocol level focused desert tortoise surveys.

In the field, boundaries and dimensions of jurisdictional features were recorded on a GPS unit, topographic maps, aerial photographs, and/or field notes. Features within the Project site were investigated for the presence of drainages, water bodies, riparian habitats, potential wetlands, and connectivity. Connectivity was ground-truthed by walking the entire Project site (Figure 5) and following the drainages from their origins to their terminal points. Photos were also taken along the Project site to detail connectivity.

Regardless of whether the drainages exhibited the potential to be three-parameter wetlands (i.e., vegetation, soils, and hydrology), representative drainages were investigated and recorded onto standardized Jurisdictional Determination – Arid West Region Data Sheets and Rapanos forms. In order to formally determine the presence or absence of wetlands, site features were recorded onto the standardized data sheets. Recorded data included plant species with percent covers, soil profiles in dug soil pits, and evidence of hydrology.

Potential USACE / RWQCB / CDFG jurisdictional areas were field-checked for the presence of definable channels and/or wetland vegetation, riparian habitat, soils, and hydrology. The lateral extent of a jurisdictional drainage is measured in several ways, depending on the particular situation. In the absence of a defined wetland, the USACE and the RWQCB traditionally use the determination of the presence of a bed and bank to the upper limit of the OHWM. Under the Rapanos court decision, the USACE now requires a fact-specific significant nexus analysis to be performed for dry or ephemeral washes (non-RPWs) in southern California to determine the extent of USACE jurisdiction on a given project site.

Potential wetland habitats were evaluated using the methodology set forth in the 1987 Wetland Manual. The 2006 Arid West Supplement was in effect at the time this survey commenced and was therefore applied to this Project. Features with no evidence of wetland hydrology, and which supported only upland vegetation, were evaluated for the upward limits of jurisdiction and not exclusively for wetland parameters.

The RWQCB includes all USACE jurisdictional areas, OHWMs in non-RPWs, isolated wetlands, and any other feature that has an effect on surface or subsurface water quality within California. The CDFG takes jurisdiction to the top of the bank on either side of the drainage or to the outer edge of all riparian vegetation, whichever measurement is greater. This edge, as determined by the "dripline" of the riparian canopy, is used as the line of demarcation between riparian and upland habitats. On smaller streams or dry washes with little or no riparian habitat, the top of the bank is used to mark the lateral extent of CDFG jurisdictional drainage. Drainage widths were measured in feet for jurisdictional acreage calculations. Reference photographs were taken during this survey and are included as Appendix G.

Jurisdictional Determination – Arid West Region Data Sheets and Rapanos forms were used to record data and to assist in the determination of the wetland characteristics for each individually numbered soil pit (Appendix H). Data points and soil pits were recorded and used to delineate the wetland boundaries. Additional test pits were dug throughout the Subject Drainage to confirm the presence of hydric soils. All delineations were digitized for the precise mapping of jurisdictional areas. Where no wetlands were present, the lateral limits of USACE / RWQCB / CDFG jurisdiction were measured and recorded onto high-resolution aerial photographs and field notes. All data on jurisdictional and wetland delineations were reproduced using Geographic Information System (GIS) software and displayed on aerial maps for this report (Figure 6).

2.5.3 Vegetation

For the wetland delineation, plants were categorized according to their probabilities to occur in wetlands versus non-wetlands in accordance with the categories in the *National List of Species that Occur in Wetlands* (Reed 1988). More specifically, the California Land Resource Region (Region 0) wetlands plant list was used, which is a regional adaptation of the *National List*. The wetland species categories are:

I. **Obligate Wetland (OBL)** – Occur almost always (estimated probability >99 %) under natural conditions in wetlands.

II. **Facultative Wetland (FACW)** – Usually occur in wetlands (estimated probability 67 % to 99 %), but occasionally found in non-wetlands.

III. **Facultative (FAC)** – Equally likely to occur in wetlands or non-wetlands (estimated probability 34 % to 66 %).

IV. **Facultative Upland (FACU)** – Usually occur in non-wetlands (estimated probability 67 % to 99 %), but occasionally found in wetlands.

V. **Obligate Upland (UPL)** – May occur in wetlands in another region, but occur almost always (estimated probability >99 %) under natural conditions in non-wetlands in southern California. All species not listed on the *National List of Species that Occur in Wetlands* (Reed 1988) are considered to be UPL.

VI. **No Indicator (NI)** – NI is recorded for those species for which insufficient information was available to determine an indicator status.

Plant species and absolute percent covers were recorded by stratum (i.e., tree, sapling/shrub, herb, woody vine) and evaluated for dominance and prevalence according to guidelines in the 1987 Wetland

Manual and Arid West Supplement. Naming conventions followed *The Jepson Desert Manual; Vascular Plants of Southeastern California* (Baldwin et al. 2002).

2.5.4 Soils

Soil pits were dug in representative delineated features on the Project site, and soils were evaluated according to guidelines in the 1987 Wetland Manual and Arid West Supplement. Soil layers were examined for the presence or absence of hydric soil indicators and oxidation/reduction features indicative of a history of saturated soil conditions.

2.5.5 Hydrology

Typical hydrologic indicators were observed per the 1987 Wetland Manual and Arid West Supplement guidelines. Indicators include evidence of inundation, saturation, high water table, watermarks, drift lines, sediment deposits, surface soil cracks, water-stained leaves, biotic crust, aquatic invertebrates, hydrogen sulfide odor, and the presence or oxidation/reduction features in the soil, among several others.

Consideration of the climate and flow frequency is given when observing watermarks and drift lines. For the purpose of determining hydrologic connectivity to a TNW, aerial photos, NWI maps, and USGS quad maps were referenced; and all features were inspected in the field on and offsite for true connectivity.

SECTION 3.0 – RESULTS

3.1. SOILS

The USDA Soil Conservation Service and USDA NRCS Web Soil Survey has not mapped soils within the Project site (USDA 2009). No Order III soil survey has been conducted on or in the vicinity of the proposed Project area. Data derived from the State's soil geographic database (STATSGO) has limitations. STATSGO (Order V) in particular was meant for regional planning purposes with large scale extrapolation from other sources. With very limited ground-truthing, these data have limited application. The 1970 General Soil Map for the SW Desert Area, San Bernardino County, has mapped and described the soils within the project area as the Arizo-Daggett Association (excessively drained and somewhat excessively drained, very deep, gravelly soils). The following includes a description of soils identified during the reconnaissance level survey.

The Project site consists primarily of sandy loam soils on the flat terraces, loamy sandy soils, and loamy sand within the drainages and washes. The loamy sandy soils were more prevalent in the northern portion of the Project site and in the eastern area along the washes. Overall, these are well drained soils typical of sandy environments. A layer of caliche rock was exposed in some areas of the washes and dirt roads, and desert pavement type soils were observed in patches throughout the western area of the site; these substrates were unvegetated. There were no limestone outcroppings or carbonate soils present, no blowsand or deep stabilized dunes observed, and no gypsum soils were present onsite. These soil types are known to support certain special status plant species in this area.

3.2. VEGETATION

Based on the reconnaissance-level and protocol-level focused plant surveys performed by Chambers Group, 103 plant species have been documented within the Project site (Appendix A). Although species richness (the number of species in given area) of perennial shrubs in the Mojave desert is typically low, the richness of annual desert wildflowers can be quite high during a good rainfall year. The number of species observed by Chambers Group botanists onsite during the focused plant survey is not a reflection of ecosystem health, but rather dependent upon the time of year in which the survey was conducted. Richness may be higher during early spring months or during above-average rainfall years, however the surveys were conducted in late spring to capture the blooming periods of special status plant species with a potential to occur onsite.

3.2.1 Vegetation Communities Descriptions

At the time of the reconnaissance-level survey, the Project site was primarily composed of creosote and white bursage desert scrub, desert wash, and disturbed plant communities (Figure 3). Riparian Scrub was not identified on the site. Representative site photographs were taken to document site conditions during the survey (Appendix F). The following section summarizes the principal characteristics of the vegetation communities observed onsite in March 2009.

Creosote Bush-White Bursage Series (319 acres)

The Creosote Bush-White Bursage Series is an extremely xeromorphic (i.e., plants adapted for survival in dry conditions) mixed evergreen-deciduous shrubland that typically consists of well-drained secondary soils with very low available water holding capacity. The community typically is found on slopes, fans, and in valleys at elevations up to 3,300 feet amsl (Sawyer and Keeler-Wolf 1995). This community type is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), with creosote bush occupying 55 percent and white bursage occupying 45 percent of the total vegetative cover in this portion of the Project site. The total vegetative cover by perennials was approximately 45 percent. The substrate onsite consists of sandy loam and loamy sand. Often, many species of ephemeral herbs in this community will flower in late March and April if the winter rains are sufficient. Numerous annual species, still in the vegetative state prior to the onset of flowers, were observed in this community in March and bloomed in April and through the first part of May 2009.

Creosote Bush-White Bursage Series is present throughout the eastern portion of the Project site. In addition to creosote bush and white bursage, other common plant species found on the Project site typical of this vegetation community include: common fiddleneck (*Amsinckia menziesii*), blackbush (*Coleogyne ramosissima*), Nevada ephedra (*Ephedra nevadensis*), winter fat (*Krascheninnikovia lanata*), box-thorn (*Lycium* sp.), blazingstar species (*Mentzelia* spp.), golden cholla (*Opuntia echinocarpa*), big galleta grass (*Pleuraphis rigida*), and Joshua tree (*Yucca brevifolia*).

White Bursage Series (176 acres)

White Bursage Series, described by Sawyer and Keeler-Wolf (1995), is a mixed evergreen-deciduous shrubland dominated by white bursage with creosote bush also present in lower proportion. The shrub canopy, typically less than 10 feet in height, is two-tiered with few creosote bush shrubs in the upper tier over the lower tier consisting of white bursage. The ground layer is open with annual species seasonally present. The White Bursage Series typically occurs on alluvial fans, or at the base of a mountain where several alluvial fans have merged (bajadas), stabilized sand fields, and upland slopes with well-drained soils at elevations up to 4,000 feet amsl. The substrate onsite is gravelly sand with small patches of desert pavement scattered throughout this community. The ground appeared more compacted and with larger soil particles in this series than was observed in the Creosote Bush-White Bursage Series onsite.

White Bursage Series is present on the northwestern portion of the Project site. In contrast to the Creosote Bush-White Bursage Series where creosote bush and white bursage exhibited similar cover values, the White Bursage Series is comprised of 75 percent white bursage and only 25 percent creosote bush of the total vegetative cover (approximately 35 percent) within this portion of the site. In addition to these species, other common plant species found onsite typical of the White Bursage Series include: Nevada ephedra, Pima rhatany (*Krameria erecta*), and box-thorn. Less common species found within this community include: common fiddleneck, wingnut cryptantha (*Cryptantha pterocarya*), flat-topped buckwheat (*Eriogonum deflexum*), California buckwheat (*Eriogonum fasciculatum*), wishbone bush (*Mirabilis* sp.), phacelia (*Phacelia* sp.), big galleta grass, and Joshua tree. Joshua tree is less abundant in this portion of the site than within the Creosote Bush-White Bursage Series.

Desert Wash (18 acres)

Desert Wash habitats are characterized as sandy or gravelly drainages and arroyos of the lower Mojave and Colorado deserts. This community closely resembles the Mojave Wash Scrub as described by Holland (1986). These washes typically have braided channels that rearrange with every surface flow event. The substrate of the Desert Wash area onsite consists of loose sandy soil with very little ground cover.

Desert Wash is present in the northeastern corner of the Project site and along the eastern edge of the site. The Desert Wash environments support a larger diversity of plant species than is found throughout other portions of the Project site. The Desert Wash community onsite is dominated by cheesebush (*Hymenoclea salsola*) and blunt tansymustard (*Descurainia pinnata* ssp. *glabra*), with white bursage, Nevada ephedra, creosote bush, desert alyssum (*Lepidium fremontii* var. *fremontii*), and sandpaper plant (*Petalonyx thurberi*) also common. Other less frequently occurring species in the Desert Wash include common fiddleneck, four-wing saltbush (*Atriplex canescens*), blackbush, wingnut cryptantha, bladderpod (*Isomeris arborea*), scalebroom (*Lepidospartum squamatum*), golden cholla, big galleta grass, London rocket (*Sisymbrium irio*), and occasional Joshua trees.

Disturbed (Sparsely Vegetated, 5 acres)

Portions of the site that are classified as Disturbed are those areas that are either devoid of vegetation (cleared or graded) such as dirt roads or those heavily compacted areas that are dominated by a sparse cover of ruderal vegetation. Disturbed Areas are present within the Project along the major, named dirt roads, in portions of the dry washes where scouring has taken place, in large areas of desert pavement, and on sediment berms throughout the site. Only sparse vegetation is found growing in these areas. Species growing in Disturbed areas include stunted white bursage shrubs, red-stemmed filaree (*Erodium cicutarium*), sapphire eriastrum (*Eriastrum sapphirinum*), and Mediterranean schismus.

3.2.2 Special Status Plant Species

The literature review resulted in a list of 31 special status plant species that have been known to occur in the area of the Lucerne Valley. The following 19 special status plant species are considered **absent** from the Project site due to a lack of suitable habitat present, no species typically associated with these plants were observed onsite (e.g., *Cordylanthus tecopensis* per California Native Plant Link Exchange 2009), or because the species occurs outside the elevation range found on the Project site:

- Parish's rock cress (*Arabis parishii*) – CNPS List 1B.2;
- Shockley's rock cress (*Arabis shockleyi*) – CNPS List 2.2; limestone endemic;
- Cushenbury milk-vetch (*Astragalus albens*) – **FE,** CNPS List 1B.1; limestone endemic;
- black milk-vetch (*Astragalus funereus*) – BLM, CNPS List 1B.2;
- flat-seeded spurge (*Chamaesyce platysperma*) – CNPS List 1B.2;
- Tecopa bird's beak (*Cordylanthus tecopensis*) – BLM, CNPS List 1B.2;
- Cushenbury buckwheat (*Eriogonum ovalifolium* var. *vineum*) – **FE,** CNPS List 1B.1; limestone endemic;
- Kingston bedstraw (*Galium hilendiae* ssp. *kingstonense*) – BLM, CNPS List 1B.3;
- Kingston Mountains ivesia (*Ivesia patellifera*) – BLM, CNPS List 1B.3;
- Robison monardella (*Monardella robisonii*) – BLM, CNPS List 1B.3;
- little mousetail (*Myosurus minimus* ssp. *apus*) – CNPS List 3.1;
- white-margined beardtongue (*Penstemon albomarginatus*) – BLM, CNPS List 1B.2; stabilized dunes, sand, and in washes;
- Stephen's beardtongue (*Penstemon stephensii*) – BLM, CNPS List 1B.3; desert mountains;

- Parish's phacelia (*Phacelia parishii*) – BLM, CNPS List 1B.1; typically found on playas in clay or alkaline soils;
- Parish's popcorn-flower (*Plagiobothrys parishii*) – CNPS List 1B.1;
- Parish's alkali grass (*Puccinellia parishii*) – BLM, CNPS List 1B.1; wetland obligate; Rabbit Springs;
- salt spring checkerbloom (*Sidalcea neomexicana*) – CNPS List 2.2; wetland species;
- bird-foot checkerbloom (*Sidalcea pedata*) – **FE, SE,** CNPS List 1B.1; and
- white-margined oxytheca (*Sidotheca emarginata*) – CNPS List 1B.3.

After conducting the reconnaissance survey and determining that suitable habitats were present onsite, 12 of the 31 special status species were considered to have a potential to occur on the Project site. A protocol-level focused plant survey was recommended and subsequently conducted. The survey for these 12 species was completed in May 2009, when these species were in bloom and would be both evident and identifiable at the time of the survey. The protocol level focused plant survey for the 12 species was negative. No federal or state-listed as threatened or endangered or otherwise sensitive species were observed onsite. Many of the special status plant species with a potential to occur onsite require specific soil types that are not characteristic of the Project site. The information presented on these 12 species is summarized in a PFO table (Appendix J).

There were multiple seedlings of an *Astragalus* species present onsite at the time of the protocol-level focused plant survey in May, which possessed similar vegetative characters to the Cushenbury milk-vetch (a special status plant). However, these seedlings did not have any flowers or fruits present on the plant in May to positively identify the species. Botanists re-visited the site on June 26, 2009 and were able to confirm that the unknown seedlings were not the sensitive Cushenbury milk-vetch. The seedlings onsite had 13 to 17 leaflets per compound leaf; Cushenbury milk-vetch only has 5 to 9 leaflets per leaf. Botanists also visited the Box S Springs location where a reference population for the Cushenbury milk-vetch was recorded in 1989 less than 4 miles southwest of the Project site (CDFG 2009). The habitat at the reference site was rocky and very different from that found at the Project site, which suggests that suitable habitat for the Cushenbury milk-vetch is not present on the Project site.

Rainfall on the site was above the average monthly precipitation amount for November and only slightly below the average for December (Table 3). The amount of rainfall received in April 2009 allowed for a high diversity of annual plant species to germinate by May 2009 on the Project site; however, this rainfall amount may not have been sufficient to allow for early-blooming and short-lived special status plant species to germinate at all or persist into May.

Table 3 Lucerne Valley Precipitation

	Total Precipitation from November 2008 to April 2009 (inches)[1]	Average Precipitation (inches) [2]
November	0.65	0.36
December	0.70	0.81
January	none	1.11
February	0.84	1.18
March	none	1.14
April	0.16	0.31

[1] Data collected from the Lucerne Valley Station near corner of Visalia Ave. and Sutter Ave. (Weather Underground 2009).

[2] Data collected from Lucerne Valley (The Weather Channel Interactive, Inc. 2009).

Based on the literature review and reconnaissance-level survey, the following three species had a **low** potential to occur on the Project site due to marginally suitable habitat present in the desert wash areas, or because the species typically occurs at elevations above those which were found onsite. However, the results of the protocol level focused plant survey for these species were negative. The following species, which would have been flowering or conspicuous at the time of the protocol level focused plant survey, are therefore considered **absent** from the Project site:

- desert cymopterus (*Cymopterus deserticola*) – BLM, CNPS List 1B.2; grows in blowsand;

Desert cymopterus is a BLM sensitive and CNPS List 1B.2 species. This perennial herb flowers between March and May in fine to coarse, well-drained sandy soils and flats of Joshua Tree Woodland and Mojavean Desert Scrub. Known ranges include: Kern, Los Angeles, and San Bernardino counties. Military activities, sheep grazing, vehicles, utility constructions, and urbanization are some of the threats to desert cymopterus.

Moderately suitable habitat is present throughout the site within the Creosote Bush-White Bursage Series, Desert Wash and White Bursage Series. No historical populations have been recorded within 10 miles of the site. This species was not observed onsite during the protocol-level focused plant survey and is considered absent.

- forked buckwheat (*Eriogonum bifurcatum*) – BLM, CNPS List 1B.2; typically grows in sandy saline soils; and

Forked buckwheat is a BLM sensitive, and CNPS List 1B.2 species. This annual herb flowers between April and June typically in sandy soils of Chenopod Scrub habitat. This species typically occurs at elevations between 2,290 to 2,660 feet amsl. Chambers Group has adopted the convention to not exclude a plant species solely based on elevation ranges unless that species has a range outside a buffer of 800 feet of the reported elevation as well. The range for this species occurs within the 800-foot elevation buffer for the site. The known range of the forked buckwheat exists in Inyo and San Bernardino counties in California and into Nevada.

Marginally suitable habitat is present in the Desert Wash areas along the eastern edge of the Project site. No historical populations have been recorded within 10 miles of the Project site. This species was not observed onsite during the protocol-level focused plant survey and is considered absent.

- Barstow woolly-sunflower (*Eriophyllum mohavense*) – BLM, CNPS List 1B.2; found on caliche and shallow soils.

Barstow woolly sunflower is a BLM sensitive and CNPS List 1B.2 species. This annual herb flowers between April and May in open sandy or silty areas of Chenopod Scrub, Mojavean Desert Scrub, and playas at elevations between 1,600 and 3,200 feet amsl. Known ranges include: Fresno, Kern, Los Angeles, and San Bernardino counties. This species is threatened by energy development, road improvements, vehicles, and grazing.

Moderately suitable habitat is present throughout the site in the Creosote Bush-White Bursage Series, Desert Wash, and White Bursage Series. No historical populations have been recorded within 10 miles of the Project site. This species was not observed onsite during the protocol-level focused plant survey and is considered absent.

Based on the literature review, the following seven species had a **moderate** potential to occur onsite due to the presence of suitable habitat. However, the results of the protocol-level focused survey for these species were negative. The following species, which would have been flowering or conspicuous at the time of the protocol level focused plant survey, are therefore considered **absent** from the Project site:

- alkali mariposa lily (*Calochortus striatus*) – BLM, CNPS List 1B.2; grows in saline soils, typically in seeps;

Alkali mariposa lily is a BLM sensitive and CNPS List 1B.2 species. This bulbiferous herb flowers from April to June in alkaline meadows, spring areas, and ephemeral washes of Chaparral, Chenopod Scrub, and Mojavean Desert Scrub at elevations between 230 to 5,200 feet amsl. Known ranges include: Kern, Los Angeles, San Bernardino, and Tulare counties and Nevada. This species is threatened by urbanization, grazing, trampling, road construction, and lowering of water table.

Mojavean Desert Scrub and ephemeral wash habitat is present within the Desert Wash located onsite. Although the soil onsite did not appear to be alkaline, there were several four-wing saltbush shrubs (which are salt tolerant) within the wash that may suggest some level of alkalinity. In addition, two known occurrences of this species have been identified within 10 miles of the Project site at Cushenbury Springs and Rabbit Springs (CDFG 2009). However, this species was not observed onsite during the protocol-level focused plant survey and is considered absent.

- Parish's daisy (*Erigeron parishii*) – **FT,** CNPS List 1B.1; limestone endemic;

Parish's daisy is a federal-listed threatened and CNPS List 1B.1 species. This perennial herb flowers between May and June on dry rocky slopes, typically on limestone alluvium, in Mojavean Desert Scrub, and Pinyon-Juniper Woodland at elevations between 2,600 and 6,600 feet amsl. San Bernardino County is the only known county where Parish's daisy is found. This species is threatened by carbonate mining, vehicles, and residential development.

Potentially suitable habitat is present within the Creosote Bush-White Bursage Series or the White Bursage Series onsite. Two known occurrences of this species have been recorded within 5 miles of the Project site near Highway 18 at Camp Rock Road (CDFG 2009). However, this species was not observed onsite during the protocol-level focused plant survey and is considered absent.

- Mojave monkeyflower (*Mimulus mohavensis*) – BLM, CNPS List 1B.2;

The Mojave monkeyflower is a BLM sensitive and CNPS List 1B.2 species and is a California endemic. This annual herb flowers between April and June and is found in dry, sandy, and gravelly areas, washes, and between or against rocks. Habitat includes Mojavean Scrub and Joshua Tree Woodland at elevations between 2,000 and 4,000 feet amsl. The known range of this species exists in San Bernardino County. This species is threatened by development, mining, vehicles, and competition with non-native plants.

Suitable habitat is present throughout the Project site, but this species is most likely to be found within the Creosote Bush-White Bursage Series or the White Bursage Series. In addition, historical populations have been recorded along Old Woman Springs Road (CDFG 2009) slightly more than 5 miles from the Project site. However, this species was not observed onsite during the protocol-level focused plant survey and is considered absent.

- short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) – BLM, CNPS List 1B.2;

Short-joint beavertail is a BLM sensitive and CNPS List 1B.2 species. This stem succulent flowers between April and June on dry slopes and washes. Habitat includes Chaparral, Joshua Tree Woodlands, Mojavean Desert Scrub, and Pinyon-Juniper Woodland at elevations between 1,400 to 7,500 feet amsl. The known range of this species exists in Los Angeles and San Bernardino counties. This species is threatened by urbanization, mining, horticultural collecting, grazing, and vehicles.

Suitable habitat is present within the Creosote Bush-White Bursage Series or the White Bursage Series onsite. No historical populations are recorded within 10 miles of the Project site. This species was not observed onsite during the protocol-level focused plant survey and is considered absent.

- Death Valley beardtongue (*Penstemon fruticiformis* var. *amargosae*) – BLM, CNPS List 1B.3;

Death Valley beardtongue is a BLM sensitive and CNPS List 1B.3 species. This perennial herb flowers between April and June on gravelly washes and canyon floors. Habitat includes Mojavean Desert Scrub at elevations between 2,800 feet to 4,600 feet amsl. The known range of this species exists in Inyo and San Bernardino counties and Nevada.

Suitable habitat is present throughout the site, but this species is most likely to be found within the Desert Wash present onsite. No historical populations are recorded within 10 miles the site. This species was not observed onsite during the protocol-level focused plant survey and is considered absent.

- Death Valley sandpaper plant (*Petalonyx thurberi* ssp. *gilmanii*) – BLM, CNPS List 1B.3; and

Death Valley sandpaper-plant is a BLM sensitive and CNPS List 1B.3 species and is endemic to California. This evergreen shrub flowers between May and September and is found in sandy washes, canyons, dunes, and slopes. Habitat includes Desert Dunes and Mojave Desert Scrub at elevations between 850 and 4,700 feet amsl. The known range of this species exists in Inyo and San Bernardino counties.

Suitable habitat is present throughout the site, but this species is most likely to be found within the Desert Wash present onsite. No historical populations are recorded within 10 miles of the site. This species was not observed onsite during the protocol-level focused plant survey and is considered absent.

- Latimer's woodland-gilia (*Saltugilia latimeri*) – CNPS List 1B.2; typically grows at elevations above the Project site.

Latimer's woodland-gilia is a CNPS List 1B.2 species. This annual herb flowers between March and June and is found in rocky or sandy, often granitic soils and sometimes in washes in Chaparral, Mojavean Desert Scrub, and Pinyon-Juniper Woodland at elevations between 1,310 and 6,235 feet amsl. The known range of this species exists in Inyo, Kern, Riverside, and San Bernardino counties. This species is known from fewer than 20 occurrences (CDFG 2009).

Suitable habitat may be present within Desert Wash present on the Project site even though this species typically is found at elevations above the elevation of the site. No known occurrences of this species have been recorded within 10 miles of the Project site. This species was not observed onsite during the protocol-level focused plant survey and is considered absent.

Based on the literature review, the following two species had a **moderate** potential to occur onsite due to the presence of suitable habitat. Neither species was observed onsite during the protocol-level focused plant survey when they were reported to be flowering (CNPS 2009). Due to the below average rainfall received in Lucerne Valley during Spring 2009, because these two species can flower as early as March, and because these very short-lived annuals are also very small (less than 1 ¼-inches in height), the white-pygmy poppy and the Little San Bernardino Mountains linanthus may not have germinated or may not have persisted into May when the survey was conducted. These two species therefore cannot be confirmed absent from the Project site and continue to have a **moderate** potential to occur onsite:

- white pygmy-poppy (*Canbya candida*) – CNPS List 4.2; and

White pygmy poppy is a CNPS List 4.2 species. This annual herb flowers between March and June in gravelly, sandy, or granitic soils of Joshua Tree Woodland, Mojavean Desert Scrub, and Pinyon-Juniper Woodland. Known ranges include: Imperial, Inyo, Kern, Los Angeles, and San Bernardino counties. This species is threatened by development, vehicles, grazing, mining, and non-native plants.

Suitable habitat is present throughout much of the site in the Creosote Bush-White Bursage Series and the White Bursage Series. No historical populations have been recorded within 10 miles of the Project site. This has species a moderate potential to occur onsite.

- Little San Bernardino Mountains linanthus (*Linanthus maculatus*) – BLM, CNPS List 1B.2.

Little San Bernardino Mountains linanthus is a CNPS List 1B.2 species and is a California endemic. This annual herb flowers between March and May and is found in sandy soils of Mojavean Desert Scrub, Desert Dunes, Sonoran Desert Scrub, and Joshua Tree Woodland at elevations between 635 and 6,810 feet amsl. The known range of this species exists in Riverside, San Bernardino, and San Diego counties. This species is threatened by development, vehicles, and dumping.

Suitable habitat is present throughout the Project site, but this species is most likely to be found within the Creosote Bush-White Bursage Series. Historical populations have been found in Rattlesnake Canyon in Yucca Valley, but not within 10 miles of the Project site. This species has a moderate potential to occur onsite.

3.2.3 Succulent Species Inventory

Several succulent species have been identified within the Project boundary (Table 4). Many succulent species are considered important components to desert communities because they are long-lived and many wildlife species depend on these species for survival. Coordination with BLM will be required to determine the extent to which these succulent species will require mitigation or translocation. Recommendations are provided in Section 4.2.

Table 4 Succulents Likely Requiring Mitigation Based on Habitat Assessment

Common Name	Scientific Name	Approximate Density Onsite
cottontop cactus	*Echinocactus polycephalus* var. *polycephalus*	infrequent, less than 5 individuals
beavertail cactus	*Opuntia basilaris* var. *basilaris*	occasional, 30-50 individuals
Joshua trees	*Yucca brevifolia*	abundant, 100-200 individuals

3.2.4 Location of Non-Native Invasive Weed Species

The overall density of weed species throughout the Project site was very low. Populations of weeds were concentrated along dirt roads or adjacent to home sites. There were five non-native invasive weed species for which locations were recorded onsite (Table 5). These species include: Sahara mustard, London rocket, Russian thistle (*Salsola tragus*), red-stemmed filaree, and foxtail chess (*Bromus madritensis* ssp. *rubens*). Locations of these non-native invasive weeds identified onsite correspond to the transect lines drawn on Figure 4. In addition, cheat grass and Mediterranean schismus also were observed onsite, but locations were not recorded as control of these species would not be feasible. The abundance of cheat grass and Mediterranean schismus was low throughout the Project site relative to the abundance of native species onsite. Small patches of cheat grass and Mediterranean schismus were concentrated beneath the creosote bush shrubs onsite and only scattered in low densities between the native shrubs. The density of these two grass species within the washes onsite was very minimal to non-existent.

Table 5 Locations of Non-Native Invasive Weeds Onsite

Transect Lines*		Sahara mustard (*Brassica tournefortii*)	foxtail chess (*Bromus madritensis*)	red-stemmed filaree (*Erodium cicutarium*)	Russian thistle (*Salsola tragus*)	London rocket (*Sisymbrium irio*)
1-1	1-5	x	x	x	x	x
1-5	1-9	x	x	x		x
1-9	1-13		x	x		x
1-13	1-17		x	x	x	x
1-17	1-21		x	x	x	x
1-21	1-25	x	x	x	x	x
1-25	1-29	x	x	x	x	x
1-29	1-33		x	x	x	x
1-33	1-37	x	x	x	x	x
1-37	1-41		x	x	x	x
1-41	boundary		x	x	x	x
2-1	2-5		x	x		x
2-5	2-9		x	x		x
2-9	2-13		x	x		x
2-13	2-17		x	x	x	x
2-17	2-21	x	x	x	x	x
2-21	2-25		x	x	x	
2-25	2-29		x	x	x	
2-29	2-33		x	x	x	
2-33	2-37		x	x		
2-37	2-41		x	x		
2-41	2-49	x	x	x		
2-49	2-53		x	x		x
2-53	2-57		x	x		x

Transect Lines*		Sahara mustard (*Brassica tournefortii*)	foxtail chess (*Bromus madritensis*)	red-stemmed filaree (*Erodium cicutarium*)	Russian thistle (*Salsola tragus*)	London rocket (*Sisymbrium irio*)
2-57	2-61		x	x		x
2-61	2-65		x		x	x
2-65	2-69	x	x	x	x	x
2-69	2-73		x	x	x	x
2-73	2-77	x	x	x	x	x
2-77	2-81		x	x		x
2-81	2-85	x	x	x		x
2-85	boundary		x		x	x
2-89	2-93		x	x		x
2-93	2-97		x	x		x
2-97	2-101		x	x		x
2-101	2-105		x	x		x
2-105	2-109		x	x		x
2-109	2-113		x	x		x
2-113	2-117		x	x		x
2-117	2-121	x	x	x		x
2-121	2-125		x	x		x
2-125	2-129		x	x		x
2-129	boundary		x	x		x

*** Transect Line numbers correspond to lines drawn on Figure 4.**

3.3. WILDLIFE

Wildlife species observed or detected during the site survey were characteristic of the existing site conditions. A full list of the wildlife species detected within the Project area is included in Appendix C. Weather conditions during the reconnaissance-level survey included temperatures ranging from approximately 42 to 77 degrees Fahrenheit with clear skies and dry conditions. Weather conditions during the protocol level focused desert tortoise and burrowing owl surveys ranged from temperatures of 41 to 82 degrees Fahrenheit, with average winds from 0.8 to 18 miles per hour, and cloud cover from 0 to 100 percent. One rainfall event occurred on April 10, 2009; no surface water collected on the Project site during this event. Weather conditions during the avian point count surveys included temperatures of 40.5 to 61.5 degrees Fahrenheit, wind speeds of 0 to 20 miles per hour, and cloud cover of 0-35 percent.

3.3.1 Birds

Thirteen bird species were observed/detected on the Project site during the one-day reconnaissance level survey. Species included black-throated sparrow (*Amphispiza bilineata),* sage sparrow (*Amphispiza belli*), California quail (*Callipepla californica),* horned lark (*Eremophila alpestris*), mourning dove (*Zenaida macroura*), rock pigeon (*Columba livia*), black-tailed gnatcatcher (*Polioptila melanura*), ladder-backed woodpecker (*Picoides scalaris*), common raven (*Corvus corax*), European starling (*Sturnus vulgaris*), northern harrier (*Circus cyaneus*), and house finch *(Carpodacus mexicanus).* These thirteen species are commonly found in the region. In addition, one potential ostrich (*Struthio camelus*) or possibly an emu carcass was found scattered on the western area of the Project site, most likely an escaped or released pet.

BLM requires a series of avian point count transect surveys for all solar projects. The following table shows the results of the avian point count transects.

Table 6 Avian Point Counts

Species Name	Number of Detections			
	Transect #1	Transect #2	Transect #3	Transect #4
American kestrel (*Falco sparverius*)		1		
mourning dove (*Zenaida macroura*)	1	1	1	
black-chinned hummingbird (*Archilochus alexandri*)		1		
Say's phoebe (*Sayornis saya*)			2	1
California horned lark (*Eremophila alpestris*)			5	4
barn swallow (*Hirundo rustica*)		1		
common raven (*Corvus corax*)		2	2	8
black-tailed gnatcatcher (*Polioptila melanura*)		1		
Le Conte's thrasher (*Toxostoma lecontei*)	1			
sage sparrow (*Amphispiza belli*)		1	9	10
black-throated sparrow (*Amphispiza bilineata*)	20	13	17	28
Brewer's sparrow (*Spizella breweri*)			1	2
house finch (*Carpodacus mexicanus*)			2	
Total Number of Detections	**22**	**21**	**39**	**53**
Cumulative Species Richness*	**3**	**8**	**8**	**6**

*Defined as the number of native species observed during the avian point count survey for a specific transect.

No sensitive avian species were detected during the avian point count survey. Fairly even distribution of avian species was displayed within the three main vegetation habitats identified on the Project site (Creosote Bush – White Bursage Series, White Bursage Series, and Desert Wash). Transects 1 and 2 had nearly the same number of detections, Transect 3 had nearly twice as many as 1 and 2, and Transect 4 had the highest number of detections with a total of 53. Transects 2 and 3 had the highest Cumulative

Species Richness with eight species each. Although Transect 1 had the lowest Cumulative Species Richness with only three total species detected, one of the three species was a Le Conte's thrasher (*Toxostoma lecontei*), a secretive bird that is not observed often. The Le Conte's thrasher is sensitive only within the San Joaquin area (Shuford et al. 2008). The most abundant species onsite was black-throated sparrow (*Amphispiza bilineata*). Other species commonly detected were California horned lark (*Eremophila alpestris*), common raven (*Corvus corax*), and sage sparrow (*Amphispiza belli*).

Incidental avian observations onsite during the burrowing owl and desert tortoise protocol level focused surveys included northern harrier (*Circus cyaneus*), (CSC) – nesting; prairie falcon (*Falco mexicanus*), CDFG watch list – nesting; whimbrel (*Numenius phaeopus*), California gull (*Larus californicus*), short-eared owl (*Asio flammeus*) sign, Allen's or rufous hummingbird (*Selasphorus* sp.), and lesser nighthawk (*Chordeiles acutipennis*). All incidental species were observed foraging or migrating through the Project site.

3.3.2 Mammals

Seven common mammal species were observed on the Project site during the initial reconnaissance survey. Common species observed were the black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), domestic dog (*Canis familiaris*), and kit fox (*Vulpes macrotis*). A property within the project site hosts approximately 5 domestic dogs within a chain linked fence, one dead dog was found buried nearby. In addition, sheep (*Ovis aries*) carcasses were observed in the western portion of the site. Two species of ground squirrels were observed on site, the Antelope ground squirrel (*Ammospermophilus leucurus*) and the round-tailed ground squirrel (*Spermophilus tereticaudus*). A site assessment for Mohave ground squirrel was conducted in May 2009 (see Section 3.3.3) by Steve Montgomery (see resume in Appendix D).

3.3.3 Special Status Wildlife Species

After a literature review and an assessment of the various habitat types on the Project site, it was determined that six special status wildlife species have the potential to occur within the Project site. Factors used to determine potential for occurrence include quality of habitat, impact of surrounding residential development, and the date and location of prior CNDDB records of occurrence. The following identifies these sensitive species and their potentials to occur. Current listing status for each species is provided after their scientific names. The information presented on these six species is summarized in a PFO table (Appendix J).

Due to the lack of recorded historical occurrences within 5 miles of the Project site, the following three species have a **low** potential for occurrence on the Project site:

- pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*) – CSC; coastal slope subspecies

The pallid San Diego pocket mouse is a California Species of Concern. It is found on the margins of the Mojave Desert in California, on the northern slopes of the San Bernardino Mountains, in high elevations of eastern San Diego County, and the edge of the Colorado Desert, south to the Mexican boundary. It is especially known to occur in arid desert border areas of San Diego County, in Riverside County southwest of Palm Springs, in San Bernardino County from Cactus Flat to Oro Grande, and east to Twentynine Palms. It prefers drier environments of the higher elevations and plateaus, and it is found up to 6,000 feet in elevation at Cactus Flat, along the north slope of the San Bernardino Mountains. It tends to occur in sandy, herbaceous areas, usually in association with rocks or course gravel (Grinnell 1933, Miller and Stebbins 1964). This species is found in a wide variety of habitats, including dry alluvial fans, dry desert slopes, sparse scrublands and grasslands, grassland/chaparral/sage scrub ecotones, redshank chaparral, and Pinyon-Juniper Woodland. This species is similar in appearance to *C.f. fallax*, but is lighter in overall coloration. Population declines may be due to urban and agricultural development. The closest reported occurrence of this species within the project vicinity was 9.5 miles away in 1954. Habitat on the Project site is not of good quality for this species.

- western mastiff bat (*Eumops perotis californicus*) – CSC, BLM Sensitive

This species is a permanent resident throughout its range in southern California, southern Arizona, Texas, and south to South America. With a wingspan approaching two feet, the western mastiff bat is the largest bat species in North America. It is also unique in that its call can be readily identified with the unaided ear. It roosts in small colonies or singly in primarily natural substrates such as cliff faces, large boulders, and exfoliating rock surfaces (Jameson et al. 1988). It is less commonly found in artificial structures such as buildings and roof tiles. It is found in a wide variety of habitats, including desert scrub, chaparral, woodlands, floodplains, and grasslands. Reasons for observed population declines are unknown. Although this species may forage in the area, no roosting habitat occurs within the project site.

- summer tanager (*Piranga rubra*) – CSC.

The summer tanager (nesting) is a California Species of Concern. This species breeds in the southern U.S. from southwest California to the Atlantic coast as far north as New Jersey and throughout the southeast U.S. It winters from central Mexico to Brazil. It is an uncommon summer resident in riparian habitat along the lower Colorado River, and in riparian areas of southern California deserts and semi-arid lands. It is also a rare migrant in Los Angeles County, and some occurrences exist in northern California as well. In California, it breeds in riparian habitat dominated by tall willows and mature cottonwoods. In the rest of its breeding range, it is more associated with oaks. Summer tanagers feed on insects, especially bees and wasps, but feed on spiders and fruits as well. This species arrives in California in April to breed and leaves in September. Breeding season takes place from May to August with a clutch size of 3-5 eggs. Both parents care for young. Nests are built 10-40 feet above the ground on branches of willows, cottonwoods, or other riparian trees. Local population declines for this species are primarily due to the loss and fragmentation of mature willow and cottonwood stands, especially along the Colorado River. Another contributing factor includes brood parasitism by the brown-headed cowbird (*Molothrus ater*). This riparian obligate species has been observed at Cushenbury Spring, slightly more than 5 miles away. No riparian habitat occurs within the Project site.

Due to the presence of suitable habitat, but a lack of recorded historical occurrences within 5 miles of the Project site, the following species has a **low** potential for occurrence on the Project site; coordination with CDFG is recommended:

- Mohave Ground Squirrel (*Spermophilus mohavensis*) - **ST**

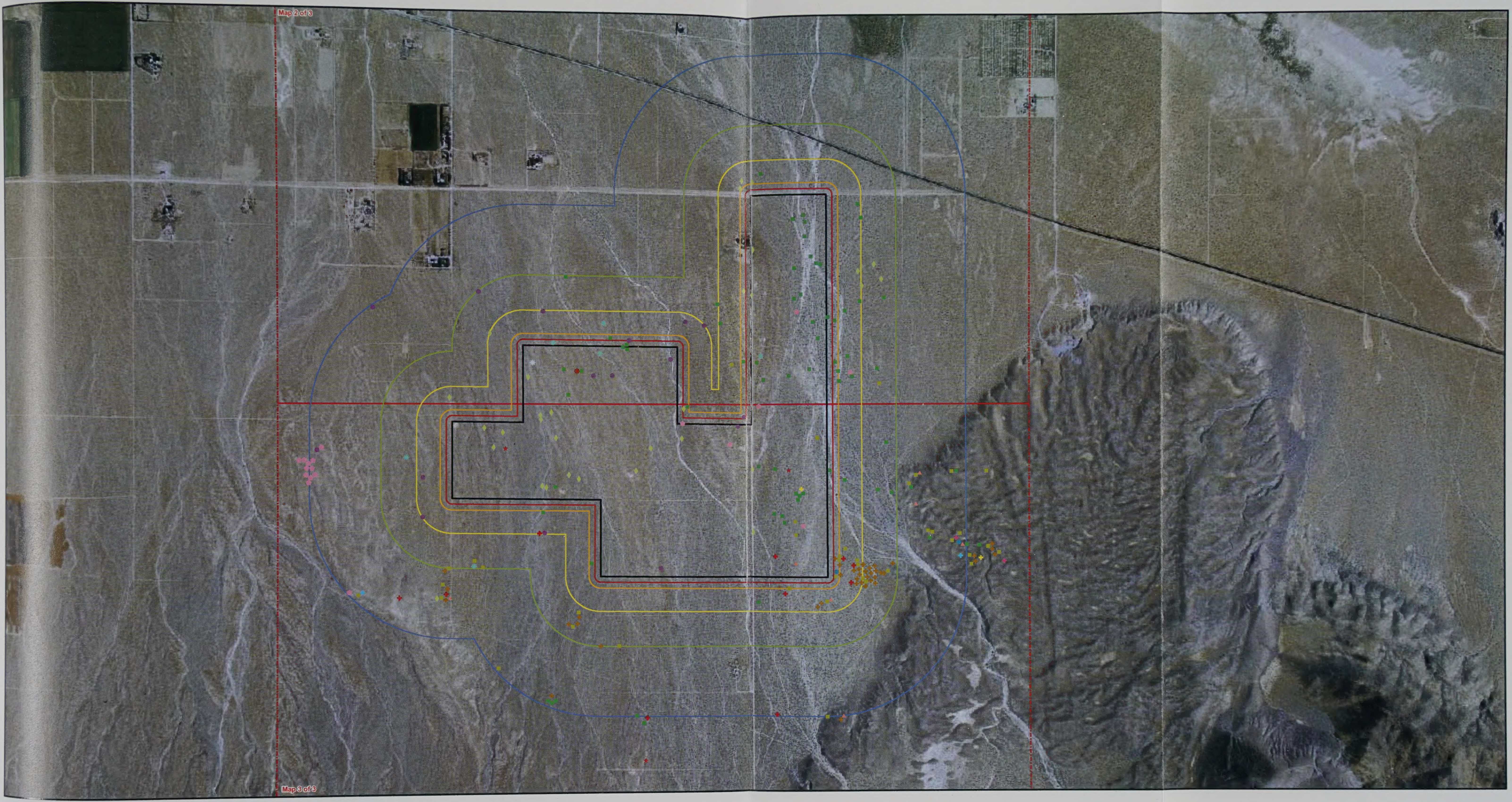
The Mohave ground squirrel is endemic, restricted to the Mohave Desert in San Bernardino, Los Angeles, Kern, and Inyo counties (CDFG 1990). The species range is from Palmdale in the southwest to Lucerne Valley in the southeast, from Olancha in the northwest to Avawatz Mountains in the northeast (Laabs 2003). They inhabit open desert scrub, alkali desert scrub, and Joshua tree communities with sandy to gravelly soils. They also will feed in annual grasslands (CDFG 1990). Mohave ground squirrels feed on green vegetation, seeds, and fruits. A study showed that most of their diet includes seeds from winter fat, spiny hopsage (*Grayia spinosa*), and saltbush (*Atriplex* sp.) (Laabs 2003). Mohave ground squirrels are active in spring and early summer (March to June) and take cover in burrows under large shrubs. Threats to this species include loss of habitat due to urbanization and agriculture and off-road vehicle use (CDFG 1990).

Habitat occurs on the Project site for the Mohave ground squirrel. The CNDDB recorded a known occurrence 8.47 miles to the northwest of the site. A known occurrence, from a personal conversation with Becky Jones (CDFG 2007), exists over five miles west from the Project site (approximately 2 miles east of the 247/18 Hwy junction). A general habitat assessment was conducted for Mohave ground squirrel by Steve Montgomery (see resume in Appendix B) to determine if habitat on the Project site may be suitable. No Mohave ground squirrels were observed or heard during a site visit on May 28, 2009 by Steve Montgomery. He revisited the site twice in early July and identified round-tailed ground squirrels off of Zircon Road. Without trapping, the presence/absence of resident Mohave ground squirrels cannot be confirmed. Although suitable habitat exists throughout the project site, the closest known occurrence is over five miles away; therefore this species has a low potential to occur on site. Based on communication with CDFG regarding this species, several trapping efforts are being conducted over 5 miles to the west of the site. Therefore, coordination with CDFG regarding this species is recommended.

Based on the literature review, burrowing owl and desert tortoise have a **moderate** to **high** potential to occur on the Project site. Protocol level focused surveys for these two species were conducted on March 24 to 27, March 31 to April 3, and April 7 to 10, 2009, by biologists Paul Morrissey, Kris Alberts, Nichole Cervin, Laura Gorman, Rebecca Alvidrez, Lisa Wadley, and Saraiah Skidmore. A subsequent protocol level focused burrowing owl survey was conducted by Heather Clayton and Nichole Cervin on June 26, 2009, at six locations that exhibited burrowing owl sign from the March/April surveys. Both desert tortoise and burrowing owl sign were observed on and near the Project site. All encounters and observations were mapped using GPS coordinates (Figure 5).

- Burrowing Owl (*Athene cunicularia*) – CSC, BLM Sensitive

The burrowing owl is a small, ground-dwelling owl with a round, grey-brown, tuftless head, long and bare yellow legs, bright yellow iris, brown back, and buffy-white underparts with brown barring (Klute et al. 2003). Insects form the bulk of its diet in the summer, and small mammals, birds, and reptiles in the winter (Klute et al. 2003). It breeds in open plains from western Canada and the western United States, Mexico through Central America, and into South America to Argentina (Klute et al. 2003) from March through August, with peak periods in May and July. This species inhabits dry, open, native or non-native grasslands, deserts, and other arid environments with low-growing and low-density vegetation (Ehrlich and Wheye 1988). It may occupy golf courses, cemeteries, road rights-of way, airstrips, abandoned buildings, irrigation ditches, and vacant lots with holes or cracks suitable for use as burrows (TLMA 2006). It occupies mammal burrows, such as badger and prairie dog, and ground squirrel, for subterranean shelter and nesting (Trulio 1997). When burrows are scarce, the burrowing owl may use man-made structures such as openings beneath cement or asphalt pavement, pipes, culverts, and nest boxes (TLMA 2006). One burrow is typically selected for use as the nest; however, satellite burrows are usually found in the immediate vicinity of the nest burrow within the defended territory of the owl. Burrowing owls are active day and night, with peak times at dawn and dusk (Klute et al. 2003). Threats to burrowing owl populations include the loss of and destruction of habitat by agriculture and urban development, the destruction of burrows, and indirect poisoning via rodent eradication efforts (Klute et al. 2003).



Legend
- ☐ Project Boundary
- ☐ Mapbook Index

Species Observed
- ★ Le Conte's Thrasher
- ♦ Winter Fat

Survey Results
- ▲ Desert Tortoise
- ■ Burrow (Class 1-3)
- ■ Burrow (Class 4-5)
- ● Pallete (Class 1-3)
- ● Pallete (Class 4-5)
- ✚ Scat
- ✚ Shell
- ✚ Carcass
- ✚ Scute
- ✚ Tracks
- ✱ Shelter Site
- ⬟ Den
- ✱ BO Pellets
- ✱ BO Burrow

Desert Tortoise ZOI
- ☐ 100'
- ☐ 200'
- ☐ 600'
- ☐ 1200'
- ☐ 2400'

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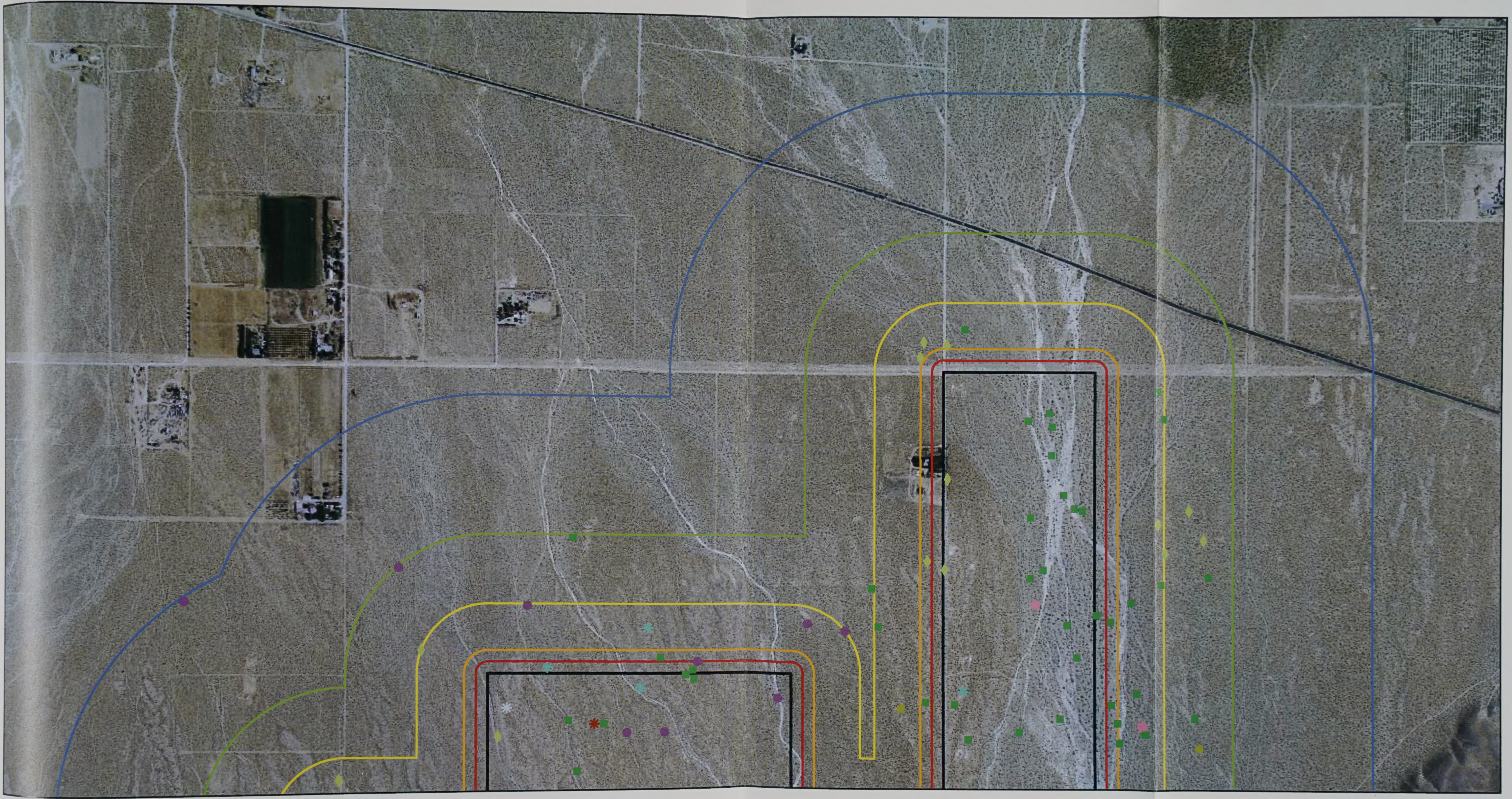
1:20,000

0 650 1,300 2,600 3,900 5,200 Feet

Chevron Solar Project
Desert Tortoise & Burrowing Owl Transect & Sign Map
Map 1 of 3
Figure 5

Chambers Group Inc.



Legend

□ Project Boundary

Species Observed

★ Le Conte's Thrasher

♦ Winter Fat

Survey Results

▲ Desert Tortoise

■ Burrow (Class 1-3)

■ Burrow (Class 4-5)

● Pallete (Class 1-3)

● Pallete (Class 4-5)

✚ Scat

✚ Shell

✚ Carcass

✚ Scute

✚ Tracks

✱ Shelter Site

⬟ Den

✱ BO Pellets

✱ BO Burrow

Desert Tortoise ZOI

□ 100'

□ 200'

□ 600'

□ 1200'

□ 2400'

N W E S

1:10,000

0 325 650 1,300 1,950 2,600 Feet

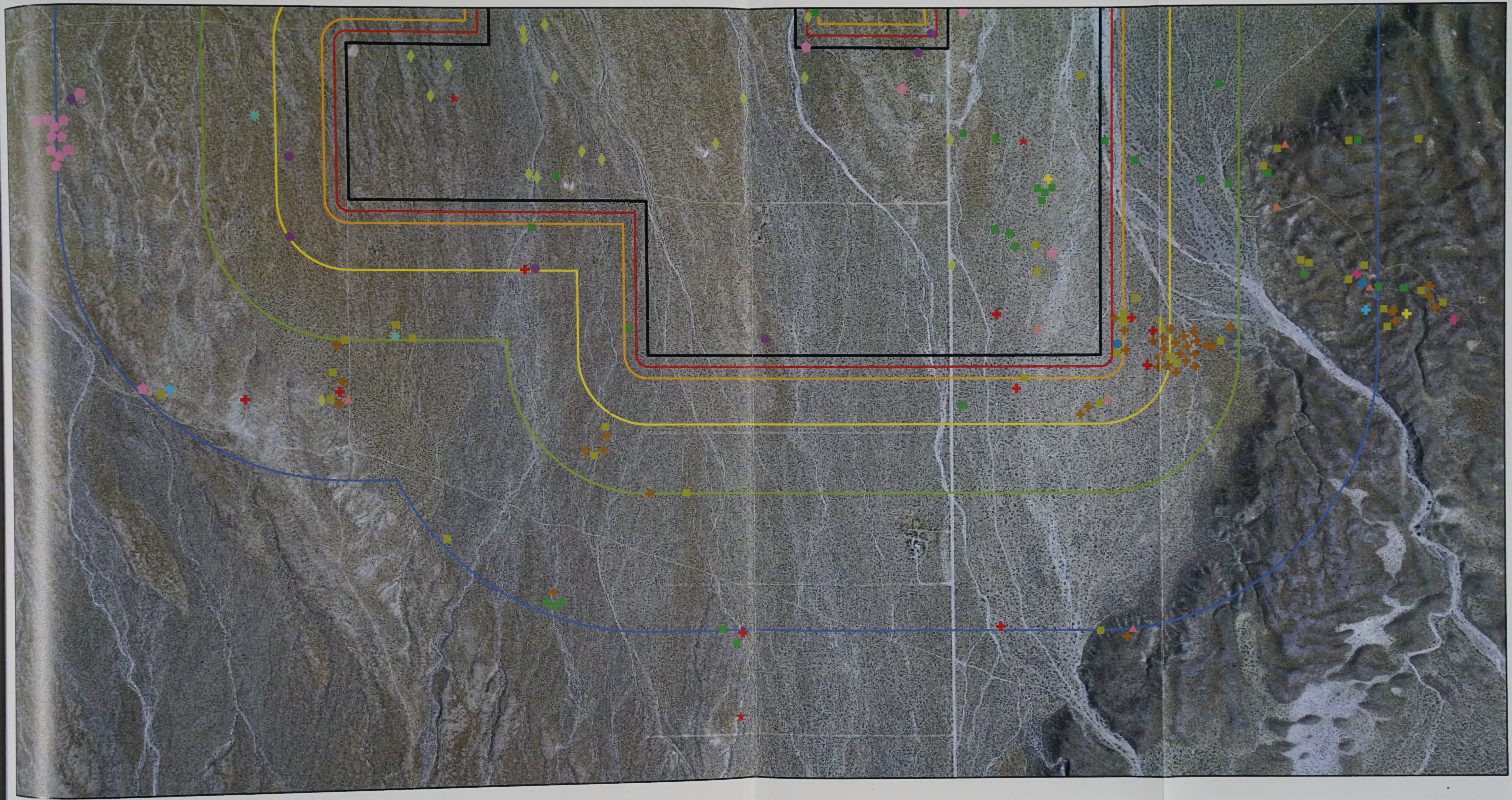
Chevron Solar Project

Desert Tortoise & Burrowing Owl Transect & Sign Map

Map 2 of 3

Figure 5

Chambers Group Inc.



Legend

☐ Project Boundary

Species Observed

★ La Conte's Thrasher

♦ Winter Fat

Survey Results

▲ Desert Tortoise

■ Burrow (Class 1-3)

■ Burrow (Class 4-5)

● Pallete (Class 1-3)

● Pallete (Class 4-5)

✚ Scat

✚ Shell

✚ Carcass

✚ Scute

✚ Tracks

✱ Shelter Site

⬟ Den

✱ BO Pellets

✱ BO Burrow

Desert Tortoise ZOI

☐ 100'

☐ 200'

☐ 600'

☐ 1200'

☐ 2400'

N
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0 325 650 1,300 1,950 2,600 Feet

Chevron Solar Project
Desert Tortoise & Burrowing Owl Transect & Sign Map
Map 3 of 3
Figure 5

Chambers Group Inc.

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Habitat for the burrowing owl occurs on the Project site. Numerous ground squirrels and appropriate burrow sites were detected on the Project site, and slopes of the drainage features provide suitable burrow sites for the owl to use. Recent records report that burrowing owls have occurred historically within the vicinity of the Project site (i.e., within five miles of the Project site).

Burrowing owl burrows with white wash and regurgitated pellets were observed on and near the Project site during the Phase II Burrow and Burrowing Owl Survey. None of the burrowing owl sign appeared to be fresh. It is estimated that the sign is two to three years old due to fading white wash and bleached/loose regurgitated pellets. Table 7 contains information about the location and sign found at burrowing owl sites. As per conversation during a recent site visit (June 9, 2009), Christopher Otahal (BLM) requested Chambers Group re-survey the burrow locations in June 2009 due to sign of owls reported on the project site; June surveys would provide more information regarding the potential current occupancy of these burrows. No new sign was identified at the six burrow locations, and no burrowing owls were identified during the June 26, 2009 Burrowing Owl Survey. Since no new sign was identified during the survey, no additional surveys were recommended. No burrowing owls or recent sign were observed in 2009.

Table 7 Burrowing Owl Sign Observed During Protocol Level Focused Burrow Surveys

	Sign	Location	
		Easting	Northing
1	Burrow with white wash and pellets.	516778	3808916
2	Burrow with white wash and pellets.	517042	3809018
3	Burrow with white wash and pellets.	516369	3807745
4	Burrow with white wash and pellets.	517023	3808860
5	Burrow with white wash and pellets.	516020	3808315
6	Burrow with white wash and pellets.	517888	3808848

- Desert Tortoise (*Gopherus agassizii*) – **FT, ST**

The desert tortoise ranges from central Nevada and extreme southwestern Utah south through southeastern California and southwestern Arizona into northern Mexico (Berry et al. 2002). In California, the historic range of this species includes northeastern Los Angeles, eastern Kern, eastern San Diego, and southeastern Inyo counties, as well as most of San Bernardino, Riverside, and Imperial counties. The desert tortoise inhabits river washes, rocky hillsides, slopes, and flat deserts with sandy or gravelly soils. Soil conditions must be friable for burrow and nest construction. Creosote bush, white bursage, saltbush, Joshua tree, Mojave yucca (*Yucca schidigera*), and cacti are often present in the habitat along with other shrubs, grasses, and wildflowers. The desert tortoise is entirely herbivorous and forages on a variety of plants, including cactus species and annual vegetation. The desert tortoise is a medium-sized tortoise with an adult carapace length of about 8 to 14 inches. Males, on average, are larger than females and are distinguished by a more concave plastron, longer gular horns, larger chin glands on each side of the lower jaw, and longer tails. Carapace color varies from light yellow-brown (horn color) to dark grey-brown. In addition to range, a composite of characteristics often is necessary to distinguish the desert tortoise from other species of gopher tortoise, but its most unique feature is its very large hind feet. Desert tortoise populations are declining due to habitat destruction/loss, predation, illegal collecting, grazing, and off-highway vehicle (OHV) use (Berry 1997).

Habitat for the desert tortoise occurs on the Project site. Soil conditions appropriate for burrow construction were present onsite. Recent records report that desert tortoises have occurred historically within the vicinity of the Project site. A total of seven desert tortoises were detected during the presence/absence surveys. One live tortoise was observed within the project boundaries, in the southeast corner of the site during the protocol level focused surveys. Five live tortoises were detected within the ZOI survey area during the protocol level focused surveys, southeast of the Project site; this area is an active tortoise area. One live tortoise was observed off site in the southwest ZOI survey area during the protocol level focused surveys. During the protocol level focused plant surveys, which were subsequent to these protocol level focused desert tortoise surveys, a tortoise was identified foraging within the southeast corner of the project site; however, based on photo-documentation, this individual already had been identified during the March/April protocol level focused surveys.

During all surveys, data were recorded for each tortoise, taking care not to get too close or harass the tortoises in any way. Measurements were estimated and photos were taken at a distance using a zoom lens. Live Tortoise Encounter Forms were filled out upon observation of each tortoise (Appendix K). Information pertaining to the live desert tortoises encountered is provided in Table 6.

Table 8 Desert Tortoise Encounters During Presence/Absence Surveys

Tortoise (ID #)	Date	Original Coordinates		Age Class	Sex	Habitat	Health
		Easting	Northing				
1	3/26/09	0518964	3807854	Adult	F	Creosote Bush Scrub near 2400' ZOI transect in SE	Shell had scratch marks and a couple chips, but tortoise appeared healthy. No URTD.
2	3/26/09	0518703	3808220	Adult	F	Creosote Bush Scrub near 1200' ZOI in SE	Had a bite mark, but tortoise appeared healthy. No URTD.

Tortoise (ID #)	Date	Original Coordinates		Age Class	Sex	Habitat	Health
		Easting	Northing				
3	3/27/09	0518702	3808069	Adult	UNK	Creosote-White Bursage Series near 1200' ZOI in SE area	Old small gnaw mark above left hind leg, otherwise tortoise appeared healthy. No URTD.
4	4/1/09	0518232	3807553	Adult	UNK	Creosote-White Bursage Series in buffer in SE area	Tortoise appeared healthy. No URTD.
5	4/7/09	0518068	3807754	Adult	M	Creosote-White Bursage Series on site in SE area	Shell had small chips but tortoise appeared healthy. No URTD.
6	4/10/09	0518312	3806948	Adult	M	Creosote-White Bursage Series on 2400' ZOI in SE	Tortoise appeared healthy. No URTD.
7	4/17/09	0516223	3807569	Adult	M	Creosote-White Bursage Series near 1200' ZOI in SW	Shell had a small chip but tortoise appeared healthy. No URTD.

The seven tortoises identified during the focused presence/absence surveys all appeared healthy. No signs of upper respiratory tract disease (URTD) were observed on any of the desert tortoises identified. In addition, no major damage to the limbs or head area from predatory attacks was observed that may impair mobility or foraging capabilities.

Four skeletal remains and one carcass were observed on or near the Project site. Carcass classification is broken down into five categories, according to USFWS desert tortoise survey methodology and sign documentation protocol (USFWS 1992). Class 1 shell remains are still fresh or putrid. Class 2 shell remains are normal in color and the scutes still adhere to the bone. Class 3 shell remains have scutes that are peeling off. In Class 4 shell remains, the shell bone is falling apart, and the growth rings on the scutes are peeling. If the remains are disarticulated and scattered, the remains are Class 5. Desert Tortoise Shell and Skeletal Remains Forms are included as Appendix L. Information pertaining to the carcass and skeletal remains is provided in Table 9.

Table 9
Desert Tortoise Skeletal and Shell Remains Observed During Presence/Absence Surveys

Tortoise Remains (ID)	Class	Location		MCL (mm)	Time Since Death	Cause of Death	Location Description
		Easting	Northing				
1	5	0518937	3807793	275	>4 YRS.	Unknown	In the open within the ZOI.
2	4	0519044	3807786	275	>4 YRS.	Possible gun shot and/or scavenged.	In the open within the ZOI, near a dead white bursage.
3	5	0518892	3807874	UNK	>4 YRS.	Unknown	In the open within the ZOI, near a tortoise shelter site.
4	3	0518101	3808140	120	2-4 YRS.	Unknown, evidence of scavenging.	In the open and under a dead Joshua tree within the project boundaries.
5	3	0515774	3807597	120	2-4 YRS.	Possible gun shot and/or scavenged.	Scattered over 20 feet in front of a burrow within the ZOI.

Other forms of desert tortoise sign were observed on and near the site. Sign included active and inactive burrows, fresh and old scat, and tracks. Tracks were generally found in sandy areas where fresh scat and active burrows were located.

In addition, two tortoises were observed on June 26, 2009 during a protocol level focused burrowing owl survey. These two individuals were observed foraging in the southwestern area, one within the Project site in the southwestern corner, one within the buffer survey area immediately off-site. These individuals were not photo-documented; therefore, it cannot be determined whether these individuals migrated from the southeastern area and were previously documented during the desert tortoise protocol level focused surveys. However, with this supplemental data, both the southeast and southwest area of the Project site are determined to support foraging adult tortoises. These two tortoises appeared healthy and did not show signs of an upper respiratory track disease or damage from predatory attacks.

Desert tortoises are solitary animals and travel long distances in order to mate during the breeding season. Tortoises and sign were found on the east and west sides of the Project site, which likely indicates that tortoises cross the site for mating during the breeding season. The two male tortoises and one female tortoise found on the southwestern area of the project site most likely utilize the burrows identified along the southern border, which allow for safe passage to the area of high density tortoise located to the southeast of the Project site. The Project site also serves as foraging grounds for desert tortoises, especially prevalent in the annual vegetation and the beavertail cacti (*Opuntia basilaris* var. *basilaris*), which showed signs of recent feedings in both the southeast and southwest corner of the Project site.

Burrow classification is broken down into five categories, according to USFWS desert tortoise survey methodology and sign documentation protocol (USFWS 1992). An active burrow with recent desert tortoise sign, such as scat, is categorized as Class 1. A Class 2 burrow is considered to be a definite desert tortoise burrow in good condition but has no evidence of recent use. Class 3 and 4 burrows are fairly deteriorated, but a Class 3 is still determined to be a desert tortoise burrow, while a Class 4 burrow is questionable. A Class 5 burrow is in somewhat good condition and could possibly be a desert tortoise burrow.

Desert tortoises utilize several different types of burrows, depending upon season and activity. These can be burrows that range from 2 to 10 meters deep or modified small mammal dens to shallow hollows less than one foot that are used temporarily during dispersal activities (Ernst et al. 1994). As desert tortoise will often utilize small mammal dens or hollows, it is not uncommon to classify these areas as potential desert tortoise burrows when in fact they initially belong to other wildlife in the area, such as kit fox and/or black-tailed jackrabbit.

A total of 107 burrows were observed on or near the Project site. Table 10 shows the breakdown of the number of burrows into separate class categories. Three Class 1-3 burrows and 31 Class 4-5 burrows were observed within the project site. Eight Class 1-3 burrows were observed within the 500-feet buffer and 27 Class 1-3 burrows were observed within the ZOI. Seventeen Class 4-5 burrows were observed within the 500-feet buffer and 21 Class 4-5 burrows were observed within the ZOI.

A total of 38 tortoise scats were observed within the buffer or within the ZOI. No desert tortoise scat was identified within the Project site. Five tortoise scats were observed within the 500-feet buffer and 33 scats were observed within the ZOI. Scat classification is also broken down into five categories, according to USFWS desert tortoise survey methodology and sign documentation protocol (USFWS 1992). A Class 1 scat is wet, not from rain or dew, or is freshly dried, and has an obvious odor. A Class 2 scat is dried with a glaze, has some odor, and is dark brown. Class 3 and 4 scats are dried with no glaze or odor, but a Class 3 scat is light brown showing little signs of bleaching, while Class 4 is light brown to pale yellow with loose material. A Class 5 scat is bleached or consists only of plant fiber. Table 10 shows the breakdown the number of scats into separate class categories.

Table 10 Desert Tortoise Sign Observed During Presence/Absence Surveys

	Burrows within Project Site	Burrows within Buffer Area	Burrows Within ZOI Area	Total Burrows Identified	Scat
Class 1	3	9	26	38	2
Class 2					16
Class 3					12
Class 4	30	21	18	69	0
Class 5					8
Total	**33**	**30**	**44**	**107**	**38**

3.4. WETLAND AND JURISDICTIONAL DELINEATION

3.4.1 Hydric Soils

The USDA Soil Conservation Service and USDA NRCS Web Soil Survey have not mapped soils within the Project site (USDA 2009). No Order III soil survey has been conducted on or in the vicinity of the proposed Project area. Data derived from the STATSGO geographic database has limitations. STATSGO (Order V) in particular was meant for regional planning purposes with large scale extrapolation from other sources. With very limited ground truthing, this data has limited application. The 1970 General Soil Map for the SW Desert Area, San Bernardino County, has mapped and described the soils within the project area as the Arizo-Daggett Association (excessively drained and somewhat excessively drained, very deep, gravelly soils). The following includes a description of soils identified during the reconnaissance level survey.

The Project site consists primarily of sandy loam soils on the flat terraces, loamy sandy soils, and loamy sand within the drainages and washes. The loamy sandy soils were more prevalent in the northern portion of the Project site and in the eastern area along the washes. Overall, these are well drained soils typical of sandy environments. A layer of caliche rock was exposed in some areas of the washes and dirt roads, and desert pavement type soils were observed in patches throughout the western area of the site.

None of these soils are listed as hydric by the National Wetlands Inventory. In addition to these soils, soil pits confirmed the absence of hydric soils within the Project site.

3.4.2 Drainage Features and Connectivity

Many drainages were observed within the proposed Project footprint. For the purposes of this report, we have identified seven main drainages (Figure 6) within the Project site footprint to help organize the data in a more manageable manner. These seven major drainage systems are numbered 1 through 7 from west to east, flowing parallel in a northerly direction and terminating up at the dry Lucerne Lake area (Figure 6). Since the drainage systems branch off into braids that meander through the site and do not always display features that provide a visual connectivity to each other, these seven drainages are further grouped into Groups 1, 2, and 3. Reference soil pits and Rapanos forms are associated with Groups 1 through 3. These intermittent drainages are typical of desert habitat, with surface flow existing only directly after a heavy rain event. For example, on April 10, 2009, a rain event occurred on the Project site, and water collected in large pools along Hwy. 247 northwest of the Project site. No surface flow occurred within the Project site.

After an intense and steady rainfall event, the drainage systems on the Project site receive water from the San Bernardino Mountains located south and southeast of the Project site, as indicated by jurisdictional features such as OHWM and bank to bank characteristics. Flow from the San Bernardino Mountain Ranges continues through the Project site in a northerly direction, crossing Foothill Road and Old Woman Springs Road, into open desert, through scattered residences, and ultimately veers northwest through an unnamed drainage that concludes at Lucerne Lake. Lucerne Lake (a large dry lake throughout most of the year) is a non-Traditionally Navigable Water (non-TNW) located approximately 12 miles northwest of the Project site. The dry lake provides terrain for off-highway vehicles (OHV), and many tire tracks and tire impressions were observed. Many of the desert washes within the Project site also show evidence of OHV usage. Additionally, the site is disturbed by pedestrian traffic traversing the Project site using the dirt roads and/or drainage systems. Within the desert washes, very little vegetation was observed during the surveys, aside from scattered, emergent desert annual flowers. Vegetation along the banks is composed of desert scrub habitats including Creosote Bush and White-Bursage Series and disturbed habitats. No riparian scrub or wetland areas were found to be present in any of the drainage systems on the Project site.

Within the seven major drainage systems identified onsite, drainage features such a definable OHWM, and bank to bank features were not always apparent. Two issues arose when determining jurisdictional water acreages. One, surface hydrology appears to braid, meander, and subside within the sandy soils without a definable OHWM. These areas on the Project site appear outside of washes in areas where subsurface hydrologic connectivity or slight erosion features occur along the drainage. Calculations of bank to bank or OHWM widths were not possible in these areas and were not included in the delineations of jurisdictional waters. Two, within the washes themselves, the last rain major event produced many small braided OHWM within each wash. Instead of measuring each of the small OHWM (many showed an OHWM of less than one inch in height), the entire width of the wash was used in calculations for determining jurisdictional waters. However, it should be noted that many of the desert washes found on the site exhibit OHV use (tire tracks and impressions), which widens the drainages beyond that which would have been created naturally by rain events. In addition, there are two hydrologic connectivity features that are present within the southwest corner and near the western boundary of the site. These erosion areas do not exhibit well-defined bank to bank or OHMs, and therefore were not used in calculating jurisdictional waters.

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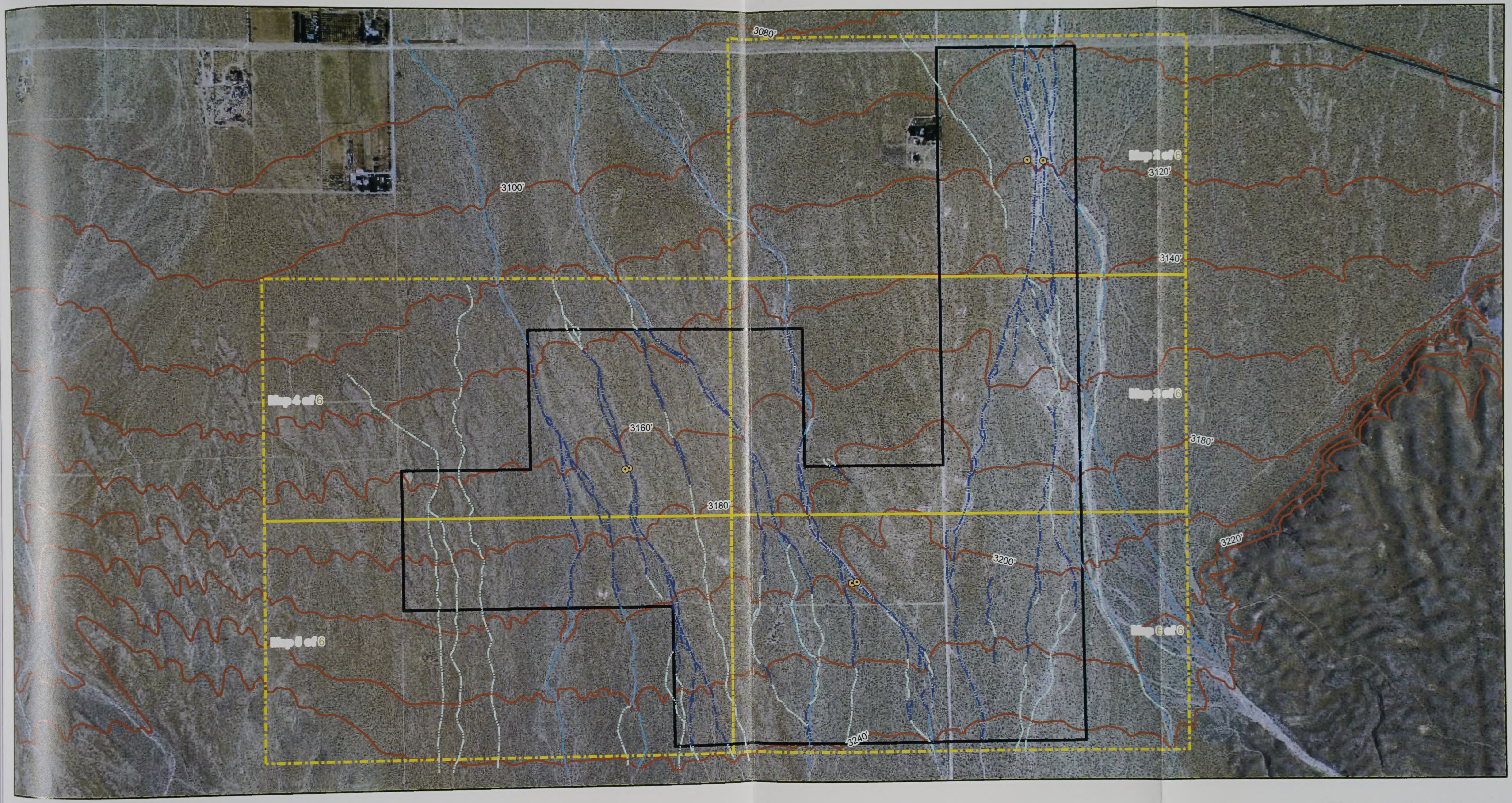
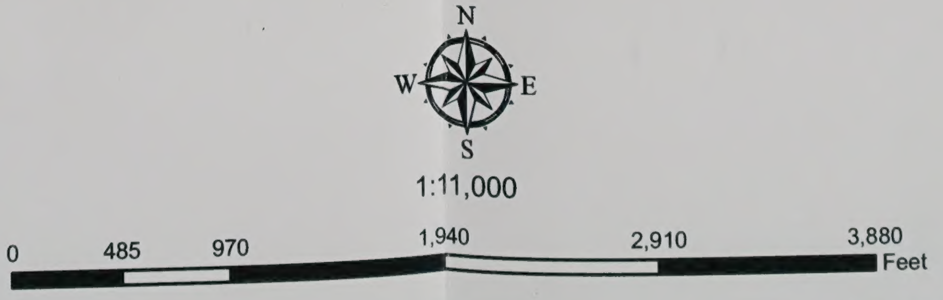


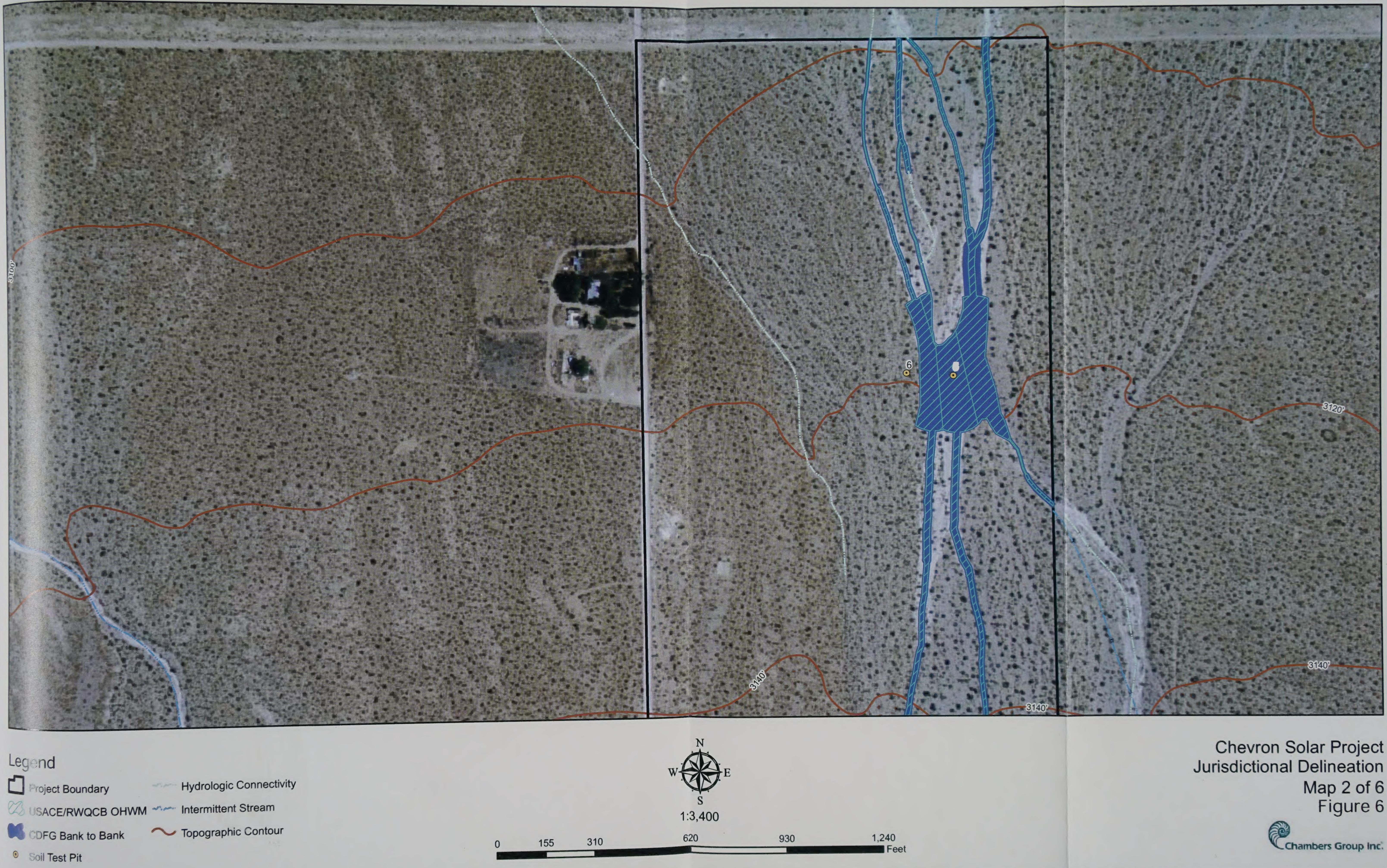
Legend

- ☐ Project Boundary
- ▭ Mapbook Index
- ● Soil Test Pit
- USACE/CDFG/RWQCB Jurisdictional Drainage
- Hydrologic Connectivity
- Intermittent Stream
- Topographic Contour



Chevron Solar Project
Jurisdictional Delineation
Map 1 of 6
Figure 6

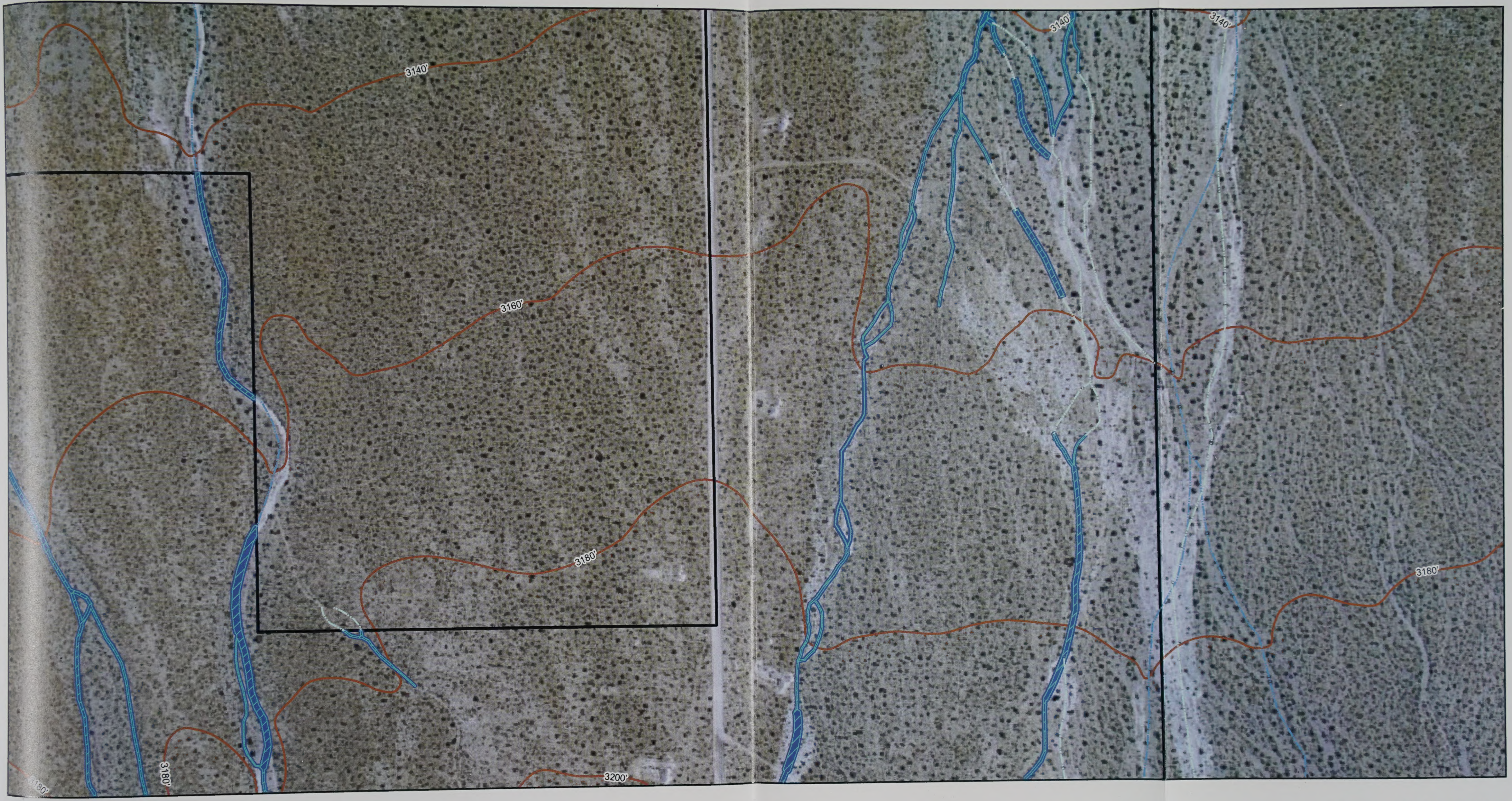
Chambers Group Inc.



Chevron Solar Project
Jurisdictional Delineation
Map 2 of 6

Figure 6

Chambers Group Inc.



Legend

▢ Project Boundary

▨ USACE/RWQCB OHWM

▨ CDFG Bank to Bank

⊙ Soil Test Pit

Hydrologic Connectivity

Intermittent Stream

Topographic Contour

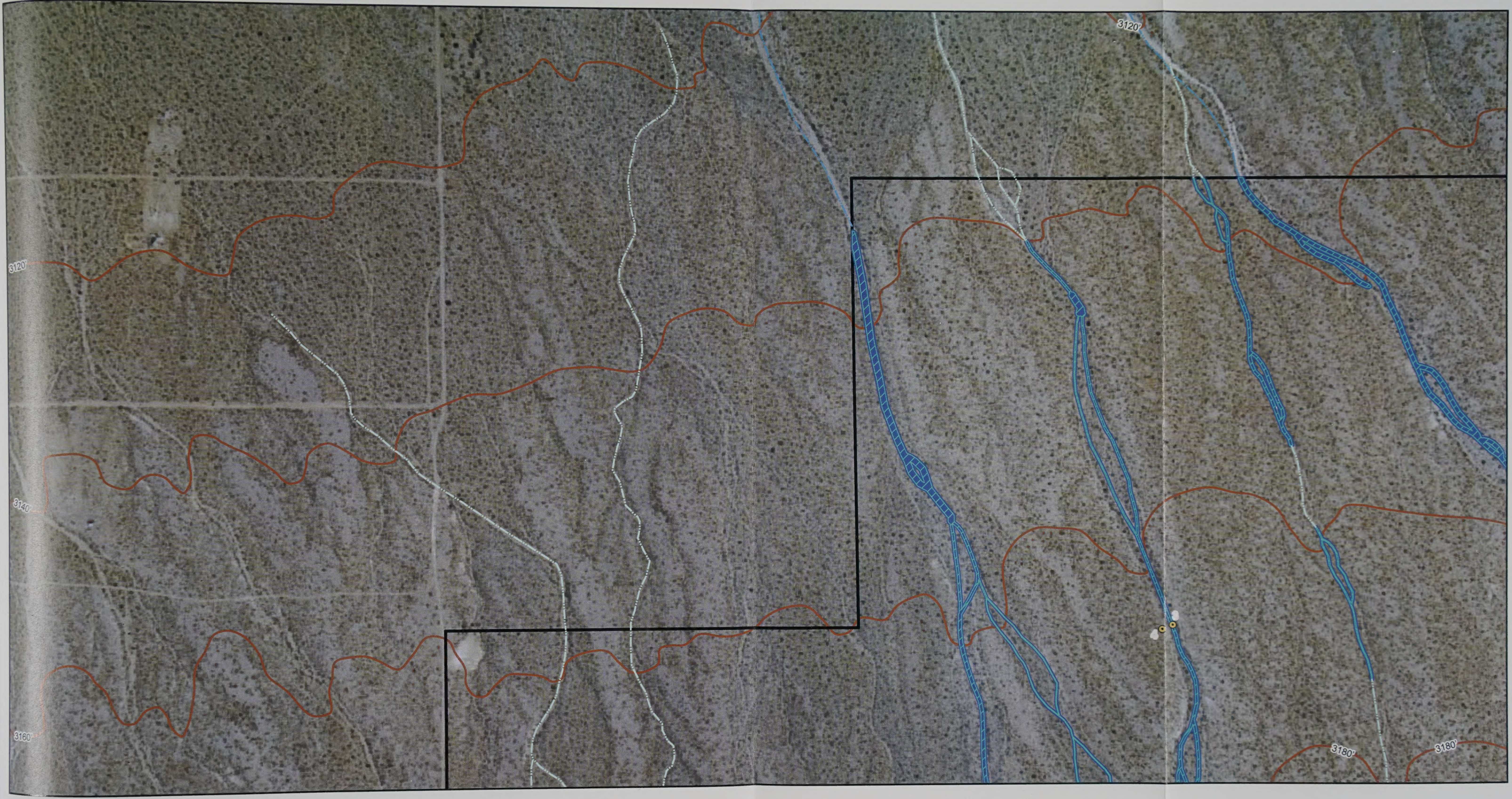
N
W E
S

1:3,400

0 155 310 620 930 1,240 Feet

Chevron Solar Project
Jurisdictional Delineation
Map 3 of 6
Figure 6

Chambers Group Inc.



Legend

☐ Project Boundary

▨ USACE/RWQCB OHWM

▨ CDFG Bank to Bank

⊙ Soil Test Pit

Hydrologic Connectivity

Intermittent Stream

Topographic Contour

N
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S

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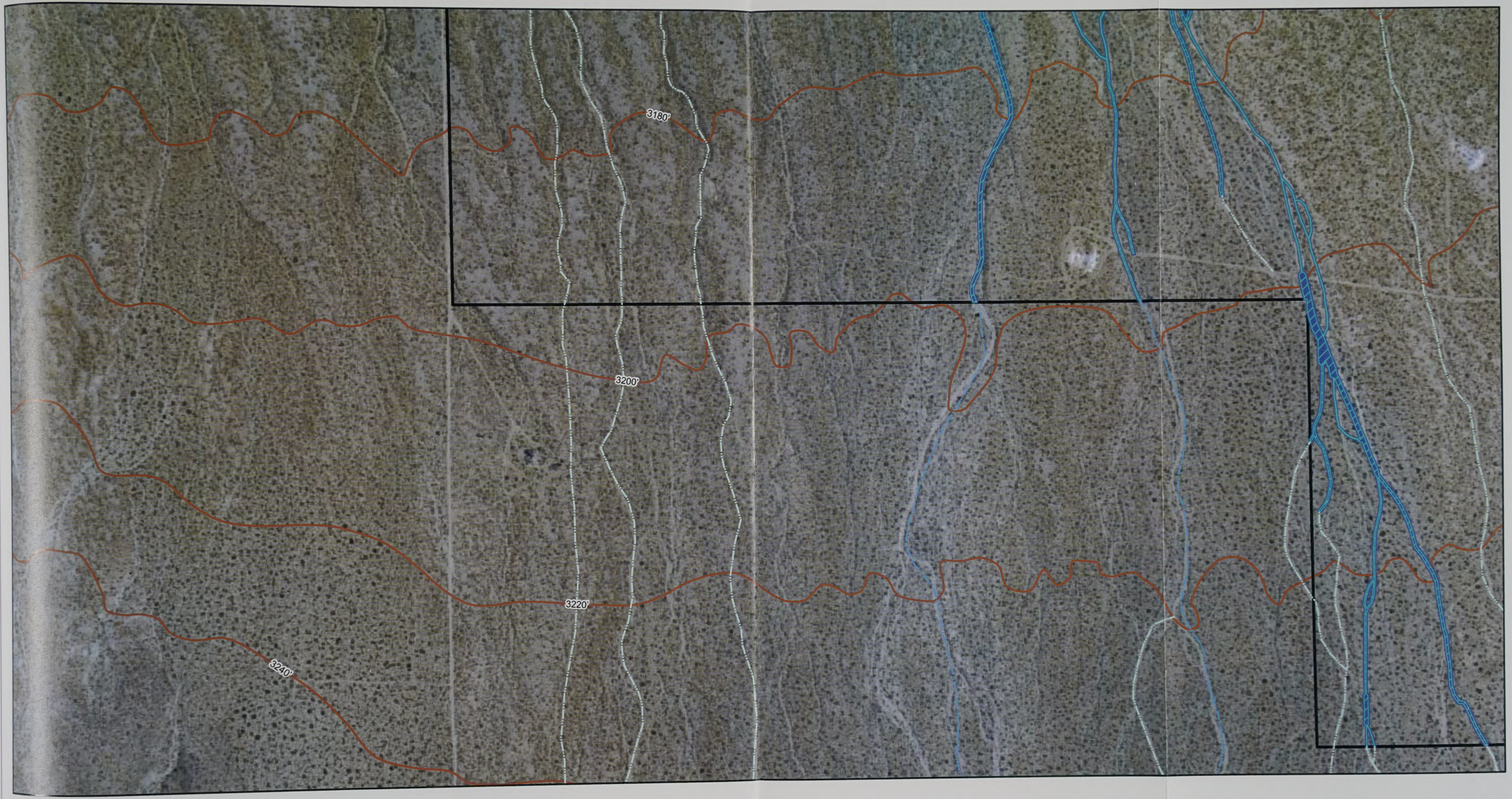
0 155 310 620 930 1,240 Feet

Chevron Solar Project
Jurisdictional Delineation
Map 4 of 6
Figure 6

Chambers Group Inc.



Chevron Solar Project
Jurisdictional Delineation
Map 5 of 6
Figure 6

Chambers Group Inc.

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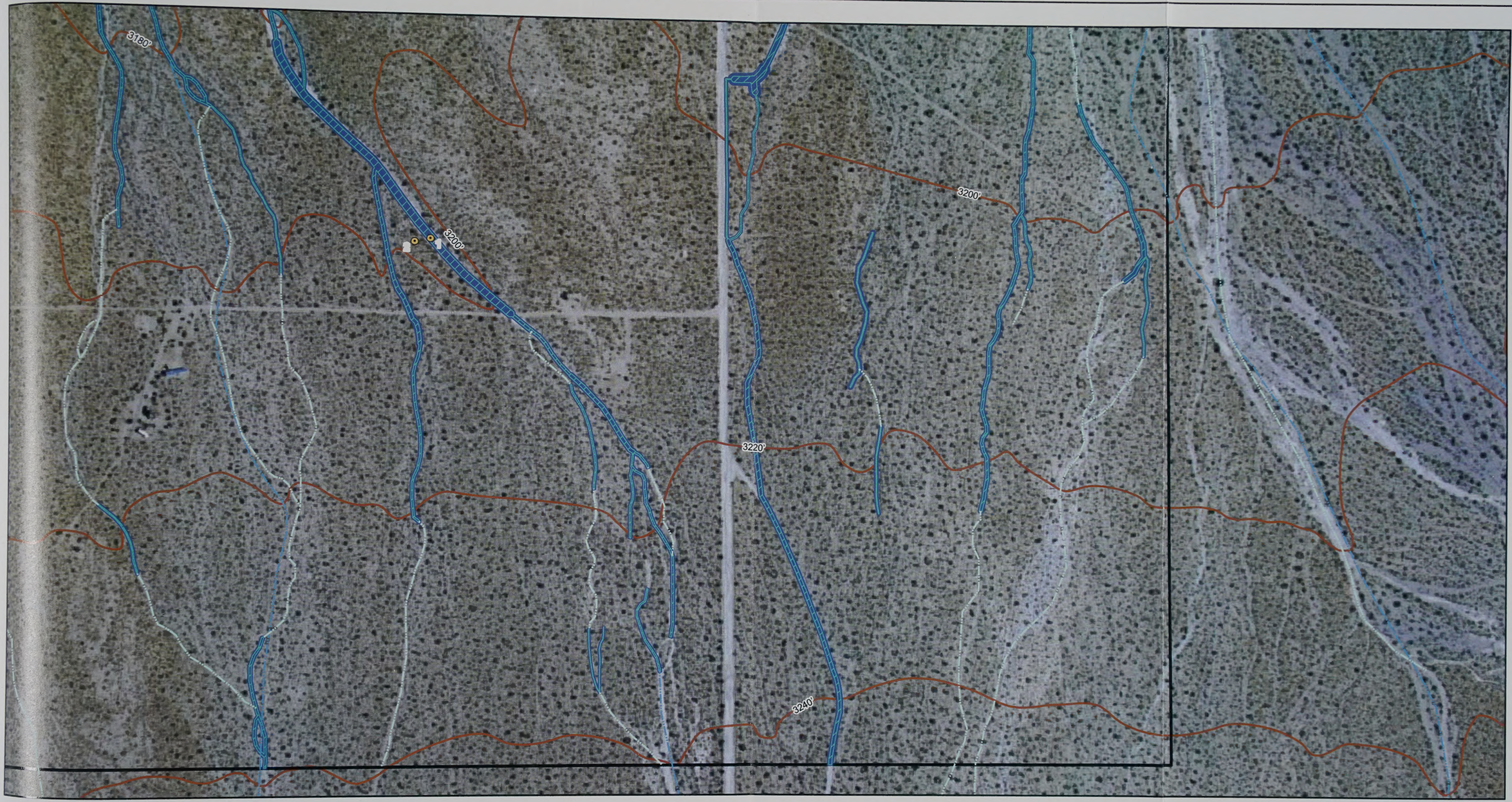
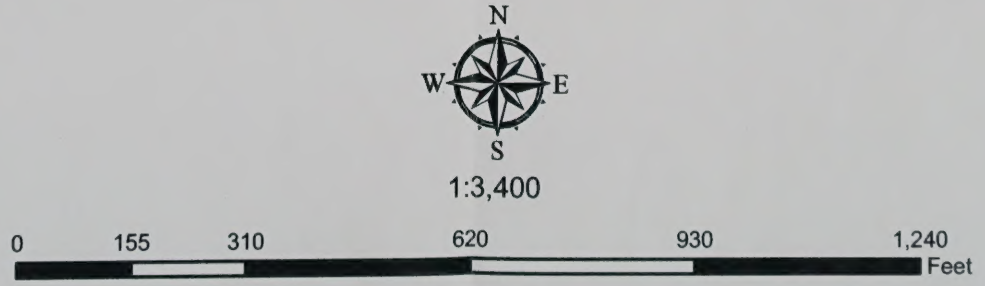


Legend

- ☐ Project Boundary
- ▨ USACE/RWQCB OHWM
- ■ CDFG Bank to Bank
- ● Soil Test Pit
- Hydrologic Connectivity
- Intermittent Stream
- Topographic Contour



Chevron Solar Project
Jurisdictional Delineation
Map 6 of 6
Figure 6

Chambers Group Inc.

Drainages 1 and 2 (Group 1) are located just east of Donaldson Road and southwest of Santa Fe Fire Road near the west side of the Project site. This drainage system flows through the western area of the Project site and does not intersect with Group 2 (Drainages 3 and 4) or Group 3 (Drainages 5, 6, and 7). This drainage system is located in a sandy wash and is the smallest of the drainage systems found on the Project site. Upland vegetation is sparsely scattered within this drainage system. Evidence of hydrology (non-riverine water marks and non-riverine sediment deposits) was present; however neither hydrophytic vegetation nor hydric soils were found to be present within this drainage system. Thus, this drainage system did not exhibit three-parameter wetlands.

Group 1

Group 1 drainage systems begin in the San Bernardino Mountains located south and southeast of the Project site. After an intense rain event, surface flow from the adjacent mountain range flows in a northerly and northwest direction through the Project site and flows subsurface just south of Foothill Road. Erosional features from this drainage system continue approximately 1.5 miles from Foothill Road northwest to Old Woman Springs Road through open desert and scattered residences. At this point flow veers in a slightly northwest direction and continues approximately 10 miles through open desert areas and subsurface through scattered residences. Group 1 ultimately concludes at the dry Lucerne Lake, approximately 12 miles northwest of the Project site. The drainage widths vary along its path, and at times the OHWM disappears through sandy substrate then reappears downstream to the north. Drainage 1 has an average bank to bank of 9.14 feet with an OHWM of 7.88 feet and a total length of 5,578.74 feet. Drainage 2 has an average bank to bank of 7.34 feet with an OHWM of 5.82 feet and a total length of 8,179.93 feet. Representative site photographs were taken to document site conditions during the survey (Appendix G). Due to the monotypic vegetation, lack of identifiable field markers, and a series of definable OHWM hidden by sandy soils, aerial photographs, USGS topographic maps, Google Earth images, NWI maps, GPS locations, and field observations were used to help assist in determining drainage characteristics and hydrologic connectivity.

Group 2

Drainages 3 and 4 (Group 2) are located east of Donaldson Road and west of Santa Fe Fire Road. This drainage system spans the center of the Project site from the south and southwest to north boundary of the Project site and does not intersect with Group 1 (Drainages 1 and 2) or Group 3 (Drainages 5, 6, and 7) within the Project site. These drainages are located just east of Group 1 and exhibit more defined OHWM and bank formations. Vegetation is sparsely scattered within the drainage system of washes, and evidence of hydrology (surface soil cracks, non-riverine water marks, and non-riverine sediment deposits) was present; however neither hydrophytic vegetation nor hydric soils were found to be present within this drainage system. Thus, this drainage system did not exhibit three-parameter wetland characteristics.

Group 2 drainages also begin in the San Bernardino Mountains located south and southeast of the Project site. After a severe rain event, flow from the adjacent mountain range flows north and northwest through the Project site, through this drainage system to Foothill Road. Flow from these drainages converges into one flow approximately one-half mile from the north boundary of the Project site at Foothill Road. From Foothill Road this drainage system continues to flow northwesterly to Old Woman Springs Road and crosses into the open desert landscape. From this location, subsurface flows continue approximately a half mile, where the flow connects to an unnamed drainage system north of the Project site (approximately 0.8 mile). At this point flow veers slightly northwest and continues approximately 10 miles through open desert areas and heads subsurface through scattered residences. Group 2 drainages ultimately conclude at the dry Lucerne Lake, approximately 12 miles northwest of the Project site. Drainage 3 has an average bank to bank of 9.02 feet with an OHWM of 7.08 feet and a total length of 7,978.99 feet. Drainage 4 has an average bank to bank of 11.13 feet with an OHWM of 8.95 feet and a total length of 7,049.88 feet. Representative site photographs were taken to document site conditions during the survey (Appendix G). Due to the monotypic vegetation, lack of identifiable field markers, and a series of definable OHWM hidden by sandy soils, aerial photographs, USGS topographic maps, Google Earth images, NWI maps, GPS locations, and field observations were used to assist in determining drainage characteristics and hydrologic connectivity.

Group 3

Drainages 5, 6, and 7 (Group 3) span the eastern area of the Project site, meandering in and out of the eastern boundary (Figure 9). These drainages are composed of sandy washes and were the widest and most extensive series of desert washes found within the site. Vegetation is also very sparse within this drainage system. Evidence of hydrology (non-riverine water marks and non-riverine sediment deposits) was present; however neither hydrophytic vegetation nor hydric soil were found to be present within this drainage system within the Project boundaries. Thus, this drainage system did not exhibit any wetlands or riparian scrub habitats. It should be noted that a dead sand bar willow (*Salix exigua*) was observed within Drainage 6 east of the Project site. This native tree is commonly found in desert riparian scrub communities, especially in sandy soils that receive a fairly constant source of water.

Group 3 (Drainages 5, 6, and 7) drainage systems also begin in the San Bernardino Mountains located southeast of the Project site. After a heavy constant rain event, flow from the adjacent mountain range flows north and northwest through the Project site to Foothill Road. Flow from this drainage system continues off the Project site in a northerly direction, crossing Foothill Road through open desert approximately one mile, then veers slightly northwest and continues approximately ten miles through open desert areas and subsurface through scattered residences. Group 3 drainage systems ultimately conclude at the dry Lucerne Lake, approximately 12 miles northwest of the Project site. Drainage 5 has an average bank to bank of 13.89 feet with an OHWM of 11.25 feet and a total length of 9,618.12 feet. Drainage 6 has an average bank to bank of 16.97 feet with an OHWM of 14.36 feet and a total length of 7,723.84 feet. Drainage 7 has average bank to bank of 35.84 feet with an OHWM of 30.80 feet and a total length of 2,290.98 feet. Representative site photographs were taken to document site conditions during the survey (Appendix G). Due to the monotypic vegetation, lack of identifiable field markers, and a series of definable OHWM hidden by sandy soils, aerial photographs, USGS topographic maps, Google Earth images, NWI maps, GPS locations, and field observations were used to help assist in determining drainage characteristics and hydrologic connectivity.

3.4.3 Wetlands

No jurisdictional wetlands were found to be present within any of the drainage systems on the Project site. Jurisdictional Wetlands are defined by three parameters:

- More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the 1988 National List of Plant Species that Occur in Wetlands [Reed 1988]). These plants are known as "hydrophytic vegetation."

- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions). Such soils, known as "hydric soils," have characteristics that indicate they are developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season.

- Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5 percent of the growing season during a normal rainfall year. For most of low-lying Southern California, 5 percent of the growing season is equivalent to 18 days.

During the delineation survey, wetland hydrology indicators (non-riverine water marks, non-riverine sediment deposits, and surface soil cracks were present in three (Soil pits 1, 3, and 5) of the six soil pits on the Project site. However, no hydrophytic vegetation such as riparian scrub vegetation or hydric soils were present within the area where the soil pit data was recorded or within any of the erosional features found on the Project site. The lack of three wetland parameters (hydric soil *and* hydrophytic vegetation *and* wetland hydrology) indicates that no jurisdictional wetlands are present within the Project site. Therefore, no additional mitigation for wetlands is required for this Project.

3.4.4 USACE Jurisdiction

The drainage systems (Subject Drainages) flow in a northerly direction through the Project site from the San Bernardino Mountains to the south and ultimately connect and terminate at Lucerne Lake, a large dry lake used primarily for recreation by off-road enthusiasts and rocketry clubs. The lake does not support interstate commerce through fishing, boating, agricultural, or other uses.

The USACE asserts jurisdiction over TNW, wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are relatively RPW where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries. TNWs and RPWs are not associated with this Project.

A significant nexus was not determined to exist for all Subject Drainages on the Project site based on the following facts:

- All Subject Drainages within the site are ephemeral and intermittent non-RPWs and exhibit surface flow only directly following a heavy and constant rain event. Although the Subject Drainages are hydrologically connected in approximately 12 miles to the dry Lucerne Lake (an isolated water body), Lucerne Lake is dry throughout the year and should not be considered a TNW; and

- Although the Subject Drainages and erosional features (hydrologic connectivity) have the capacity to carry pollutants, nutrients, and organic carbon downstream to the dry Lucerne Lake, this terminal area for the Subject Drainages is an isolated water body and should not be considered a TNW.

Therefore, no USACE jurisdiction was identified on the Project site. If, after consultation with USACE, Lucerne Lake is considered a TNW, USACE jurisdiction would include up to 48,420.49-linear feet (9.97 acres). However, based on the data from the delineation and the information at the time, no USACE jurisdictional waters exist within the Project site.

3.4.5 RWQCB Jurisdiction

The limits of RWQCB jurisdiction were defined by the OHWM within the Subject Drainages identified on the Project site. These drainages have the capacity to affect surface and subsurface water quality within California; and as a result of broad authority granted by the Porter-Cologne Act, the RWQCB has jurisdiction over the Subject Drainages.

Within the Subject Drainages identified onsite, drainage features such a definable OHWM and bank to bank features were not always visibly discernable. Surface hydrology at times appears to braid, meander, and subside within the sandy soils without a definable OHWM. These erosional areas on the Project site appear outside of washes in areas where subsurface hydrologic connectivity or slight erosion features occur along the drainage. Calculations of bank to bank or OHWM widths were not possible in these areas and were therefore not included in the delineations of RWQCB jurisdictional waters. In addition, within the washes themselves, the last rain major event produced many small braided OHWM within each wash. To determine the widths of the OHWM within the drainages, the widest area possible was recorded. However, it should be noted that many of the desert washes found on the site exhibit OHV use which widens the drainages beyond what would have been created naturally by rain events. Additionally, there are two hydrologic connectivity features that are present within the southwest corner and near the western boundary of the site. These erosion areas do not exhibit well-defined bank to bank or ordinary high water marks, and therefore were not used in calculating RWQCB jurisdictional waters.

Total RWQCB jurisdiction would include up to 48,420.49-linear feet (9.97 acres). The Design Plan for this project has not been approved at this time. Permanent impacts and temporary impacts cannot be determined with accuracy. Therefore, the acreages listed above for RWQCB jurisdiction are based on a worst-case scenario in which all of the drainages on the entire project site will be impacted. After a Plan of Design has been approved and accepted, the actual impacts, both temporary and permanent will be re-calculated and this report will be revised appropriately.

3.4.6 CDFG Jurisdiction

The limits of CDFG jurisdiction are normally larger than the other regulatory agencies because CDFG jurisdiction extends laterally from bank to bank of the stream rather than from the OHWM. Though the Subject Drainages were considered to be of poor or low quality to wildlife, primarily due to OHV usage and pedestrian traffic observed within the drainages at the time of the delineation, no aquatic wildlife or aquatic plant species were observed. The Subject Drainages within the Project site do exhibit defined bank to bank characteristics including 1 to 3-foot shelves on average, and exhibit drainage features including OHWM. Therefore, CDFG jurisdiction applies to the bed and bank formations of the seven Subject Drainages identified onsite.

Total CDFG jurisdiction includes up to 48,420.49-linear feet (12.32 acres). Permanent impacts and temporary impacts cannot be determined with accuracy. Therefore, the acreages listed above for CDFG jurisdiction are based on a worst-case scenario in which all of the drainages on the entire project site will be impacted. After a Plan of Design has been approved and accepted, the actual impacts, both temporary and permanent will be re-calculated and this report will be revised appropriately.

Table 11 contains jurisdictional acreage breakdowns for the USACE, RWQCB, and the CDFG.

Table 11 Jurisdictional Acreage Matrix

Agency	Wetland	Non-Wetland	Total Jurisdiction	Impacts to Wetland	Impacts to Non-Wetlands	Total Permanent Impacts
USACE	0.00	0.00	0.00	0.00	0.00	0.00
RWQCB	0.00	9.97	9.97	0.00	9.97	9.97
CDFG	0.00	12.32	12.32	0.00	12.32	12.32

- Total USACE jurisdictional acreage is equal to zero. The USACE asserts jurisdiction over TNW, wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are relatively permanent (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries. TNWs and RPWs do not exist for this Project. Impacts to USACE jurisdictional waters will not result from Project activities.

- Total RWQCB jurisdictional acreage, as defined by the OHWMs, amounts to 9.97 acres (48,420.49 linear feet). Impacts to RWQCB jurisdictional waters will result from Project activities.

- Total CDFG acreage, as defined by the bank to bank measurements, amounts to 12.84 acres (48,420.49 linear feet). Impacts to CDFG jurisdictional water will result from Project activities.

SECTION 4.0 – CONCLUSIONS AND RECOMMENDATIONS

4.1. SPECIAL STATUS PLANT SPECIES

Because all special status plant species could not be confirmed absent from the Project site, Chambers Group recommends that a secondary protocol-level focused plant survey be conducted during March or April of 2010 (dependent upon rainfall) for the white pygmy-poppy and the Little San Bernardino Mountains linanthus.

4.2. SUCCULENT SPECIES INVENTORY

Coordination with BLM will be required to determine the extent to which succulent species identified within the Project boundary (Table 4) will require mitigation or translocation. A survey will be necessary to document the condition and map the location of each of these succulent species onsite. Each individual succulent to be salvaged will be assigned an ID number and will be permanently tagged. GPS coordinates will be taken at all removal locations and recorded for an accurate inventory. Typically, only Joshua trees between 2 and 10 feet in height are suitable for relocation. Upon completion of the succulent species inventory, a translocation plan will be prepared for the Project site.

4.3. MINIMIZATION OF NON-NATIVE INVASIVE WEED SPREAD

To prevent contamination of weed species into new habitats, Chambers Group recommends that all vehicles and heavy equipment used onsite be cleaned to remove any seeds that may have attached to construction vehicles. The vehicles must be washed with water or blown down using compressed air prior to entering the construction site. The wash/blow down will concentrate on tracks, feet, or tires and on the undercarriage, with special emphasis on axles, frame, cross members, motor mounts, and on underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out, and the refuse will be disposed of in waste receptacles. The Contractor, with oversight from a biologist, will ensure that vehicles and equipment are free of soil and debris capable of transporting non-native invasive weed seeds, roots, or rhizomes before the vehicles and equipment are allowed use of access roads. Seeds and plant parts will be collected, bagged, and deposited in dumpsters destined for local landfills, when practical.

4.4. SPECIAL STATUS WILDLIFE

Two special status wildlife species (i.e., desert tortoise and burrowing owl) were either present on the Project site during surveys conducted by Chambers Group biologists in March and April 2009, or have a moderate to high potential to occur on the Project site due to habitat onsite and/or historic occurrences. Although the Mohave ground squirrel has a low potential to occur on the project site, coordination with CDFG is recommended for trapping efforts to confirm presence/absence and/or mitigation for this species.

4.4.1 Desert Tortoise

Desert tortoise sign was found throughout the site and the surrounding areas. A majority of the sign was observed in the southern portion of the site and particularly in the southeast corner. More sign and tortoises are present just outside the Project boundaries, especially on the southern end due to the hill slopes on the south side of the San Bernardino Mountains and the washes they create. Tortoises were identified on site during the surveys and may require relocation off-site in an USFWS and BLM approved area, within 1,000 feet of the project site, within its home range. A plan to identify the relocation area, season and timing of movement of the tortoise, and monitoring may be required. The six other tortoises identified off site within the buffer or ZOI survey area during the desert tortoise surveys could be monitored and avoided during project construction. Coordination with USFWS, BLM, and CDFG is recommended regarding this species.

The proposed Project will effect but not likely to adversely affect the desert tortoise. The conservation and monitoring measures outlined in this report and in the USFWS Biological Opinion shall reduce the direct and indirect impacts to the desert tortoise and its habitat. Chambers Group proposes that authorized monitors be present onsite throughout all of CES' construction activities, and these monitors shall be responsible for the safety of all wildlife species encountered in the Project areas.

4.4.2 Burrowing Owl

Burrowing owl sign was detected during the protocol level focused surveys. Based on a subsequent survey conducted in June, no new sign or burrowing owls were observed. Due to the presence of habitat, and the proximity of occurrences in the immediate area, CDFG may require additional surveys prior to construction activities. Coordination with CDFG regarding this species is recommended.

4.5. MITIGATION AND MONITORING

4.5.1 Desert Tortoise

Due to the presence of desert tortoises on the site and within close proximity of the site, mitigation and monitoring shall be required. CES would need to implement standard desert tortoise avoidance procedures during construction to minimize direct and indirect impacts. Also, consultation under ESA and CESA would be required. The following discussion outlines typical desert tortoise avoidance and minimization measures; however these measures may be modified during the consultation process.

- All construction personnel shall attend an agency approved Personnel Environmental Awareness Program for desert tortoise.
- Authorized Biologists (USFWS and BLM approved) would conduct preconstruction clearance surveys for desert tortoises within 48 hours of the start of ground disturbing construction activity. At a minimum, the clearance surveys would cover the entire project ROW and the area out to a 100-foot zone of influence (ZOI) around the BLM ROW project boundary, including all areas that might be subject to disturbance such as parking areas and lay down areas. Burrows that are found would be checked for desert tortoises; when desert tortoises are found, the burrows would be flagged so that equipment operators and drivers could clearly see the flagging and avoid the burrows. Unoccupied burrows would be flagged also, but in a manner that contrasts with occupied burrows. Prior to construction of the installation of exclusionary fencing, an Authorized Biologist would recheck the burrows and remove any desert tortoises that may be endangered by the construction activity following USFWS protocol. Construction within the ROW would not commence until the installation of the exclusionary fencing was complete, and all tortoises were relocated off site.

- A desert tortoise exclusion fence shall be established around the entire Project site following standard specifications. This fence shall be inspected at least monthly and maintained over the life of the Project. Special habitat features, such as burrows, identified by the authorized biologist shall be avoided. Staging areas shall be prohibited in sensitive biological areas such as within 100 feet of drainages, or known burrow locations. Staging areas shall be reviewed and approved by the Project biologist. If necessary, changes in location shall be incorporated into the construction contract. Within the authorized surface use areas, disturbances, such as temporary staging areas or parking areas for equipment, shall be confined to the smallest practical location, considering topography, placement of facilities, locations of burrows, public health, and safety. Such areas shall be marked to minimize surface disturbance associated with vehicle straying.

- All construction areas would be inspected for desert tortoises at least three times daily (start of shift, mid-day, and end of shift) until fence installation and relocation of any tortoises on site has been completed. Any hole or trench would be inspected for desert tortoises prior to its being closed. Trenches left open overnight or over a weekend would be covered with metal plates to prevent desert tortoises from entering.

- A construction monitoring team of at least one Authorized Biologist and one desert tortoise monitor would be assigned to each fence installation area. Since fence installation may have more than one construction crew working simultaneously, a desert tortoise monitor would be present with each construction crew to ensure compliance with desert tortoise protection measures. The assigned desert tortoise monitor would sweep in front of the each construction crew's equipment during its operation, and would have the authority to halt project activity as needed should danger to a desert tortoise arise. Project activity would be allowed to continue to proceed only after hazard to the desert tortoise has been removed, the desert tortoise is no longer at risk, or the desert tortoise has been moved from harm's way by the segment Authorized Biologist.

- If a Desert Tortoise Requires Relocation Offsite, the following procedure would be used: The Authorized Biologist would only handle each desert tortoise when necessary. New latex gloves would be used when handling each desert tortoise to avoid transfers of infectious diseases between animals. Desert tortoises would be moved the minimum distance possible within appropriate BLM and USFWS approved habitat offsite on public lands within its home range to ensure their safety; no adult desert tortoises would be moved in excess of 1,000 feet, or a juvenile or hatchling more than 300 feet. The Authorized Biologist would follow the protocols outlined in Desert Tortoise Council (1999). Desert tortoises found above ground that must be moved would be moved in the direction in which it was moving, and placed under the shade of a shrub.

- All desert tortoise burrows/pellets within the proposed Project areas and zone of influence (as defined in USFWS survey protocol) shall be marked so that the equipment operators can identify and avoid such shelter sites. Flagging of these locations shall be performed prior to initiation of the proposed Project.

- Heavy equipment operators shall be accompanied by a qualified biologist when working in desert tortoise habitat during construction activities. The biological monitor shall walk in front of the equipment during its operation and has the responsibility and authority to halt all Project activity should danger to a desert tortoise arise. Work shall proceed only after hazards to the desert tortoise are removed, the desert tortoise is no longer at risk, or the desert tortoise has been moved from harm's way by an authorized biologist. A desert tortoise could be found above ground during both their active and inactive seasons; therefore, a construction monitor shall be present to ensure compliance with construction best management practices (BMPs) and shall be present in the event a tortoise is found within the Project area.

- Vehicle speeds would not exceed 20 miles per hour during construction activities. The **speed limit** would be maintained within the project ROW and on unpaved access roads while driving in desert tortoise habitat.

- All leaks, spills, or releases of fuel or other hazardous materials off Project ROW would be reported immediately to BLM. All such material that leaks, spills, or is otherwise released into habitat of the desert tortoise along existing access roads or within the project ROW would be removed immediately. The Authorized Biologist would ensure that all appropriate measures, including those proposed by CES and the BO terms and conditions, are implemented during the removal of the hazardous materials.

- Water leaks will be prevented from pooling within the project area and access roads. Water tanks and/or water trucks will be inspected regularly for leaks and documented on a regular basis. If leaks are identified, corrective actions would be conducted immediately within the exclusionary fence.

- Pets and firearms shall be prohibited.

- **Trash and food items** would be disposed of promptly in predator-proof containers with re-sealable lids. Trash containers would be removed at the end of each work day.

- Off-road travel and temporary storage areas outside of the staging areas or construction zones shall be prohibited.

- BMPs shall be incorporated to prevent the soil from becoming airborne or being washed away as sediment.

- Fueling of equipment shall not occur adjacent to or in drainages.

- Stockpile areas shall be reviewed and approved by the Project biologist. If necessary, changes in location shall be incorporated into the construction contract.

- Any trenches temporarily created shall be sloped at the end of each workday to allow wildlife to escape. All trenches shall be inspected for desert tortoise occupancy before work begins the following day.

- The names of proposed authorized and qualified biologists shall be submitted by CES's environmental consultant (Chambers Group) to the BLM at least 30 days prior to the onset of construction activities. No activities shall begin until an authorized biologist is approved under the auspices of the Section 7 consultation. Project biologists, as authorized by both the USFWS and BLM, shall oversee all aspects of construction monitoring that pertain to biological resources protection and shall ensure compliance with avoidance and minimization measures. Typically, BLM requires the project proponent establish tortoise-proof enclosures for all work areas, and ultimately the Project shall need to be fenced with desert tortoise exclusion fencing for the life of the Project. The biologists shall monitor all construction activities, including the installation of desert tortoise exclusionary fencing. The biologists shall provide all maintenance personnel with an orientation and information pamphlet that discusses the biology of desert tortoise, potential hazards to tortoises from construction activities, how each construction worker can help to prevent direct and indirect harm to tortoises, the legal status of the tortoise, local adoption as alternative to poaching, and how to handle an injured tortoise.

- Encounters with desert tortoise shall be reported to an authorized or qualified biologist.

- Desert tortoises shall be handled only by the authorized biologists when necessary and in accordance with the "Guidelines for Handling Desert Tortoises During Construction Projects" (Desert Tortoise Council 1994, revised 1999). Workers shall inspect for desert tortoises resting in the shade under vehicles and equipment prior to moving. If a desert tortoise is present, the worker(s) shall allow the tortoise to move on its own accord, or notify the Authorized biologists to move the tortoise only when necessary. If this is not possible, the worker(s) shall wait for the desert tortoise to move out from under the vehicle before moving the vehicle, or the authorized biologist shall carefully move the desert tortoise using the previously mentioned protocol methods.

- The authorized biologist shall remove any desert tortoise that is threatened by Project activities to a nearby location in accordance with protocol (Desert Tortoise Council 1994, revised 1999). The proponent shall submit a post-Project report identifying all activities affecting the desert tortoise to USFWS Ventura Office and to the BLM Barstow Field Office.

- A record shall be maintained of all desert tortoises handled by the biologists. This information shall include for each desert tortoise:

  A. The location(s) (narrative and maps) and dates of observations;

  B. General condition and health, including injuries and state of healing and whether animals voided their bladders;

  C. Location moved to and from;

  D. Diagnostic markings (identification numbers or marked lateral scutes); and

  E. Photographs of each handled desert tortoise.

- Upon locating a dead or injured desert tortoise resulting from Project activities, the BLM shall notify the USFWS by telephone within three days of the finding. Written notification shall be made within five days of the finding. The information provided shall include the date and time of the finding or incident (if known), location of the carcass or injured animal, a photograph, cause of death, if known, and any other pertinent information.

- Any injured desert tortoise discovered within the Project area shall be transported by the authorized biologist to the nearest qualified veterinarian for treatment. Costs incurred for treatment shall be paid for by CES. If the animal recovers, the Ventura office of the USFWS shall be contacted for final disposition of the animal.

- If a death should occur, the BLM shall place the remains of intact desert tortoise carcasses with educational or research institutions holding the appropriate State and Federal permits. If the remains are in poor condition, the information noted above shall be obtained and the carcass left in place. If left in place, the authorized biologist or monitor shall mark the carcass to ensure that it is not reported again.

Mitigation as defined in the BLM's West Mojave Plan for loss of tortoise habitat shall be assessed at a 1:1 ratio ($770 per acre plus a 15 percent acquisition fee plus a 17.1 percent indirect cost fee). This project will likely require a relocation plan approved by the BLM, USFWS and CDFG. The plan would identify relocation and translocation areas, season and timing of movement of tortoises and monitoring. Coordination with USFWS is recommended.

4.5.2 Burrowing Owl

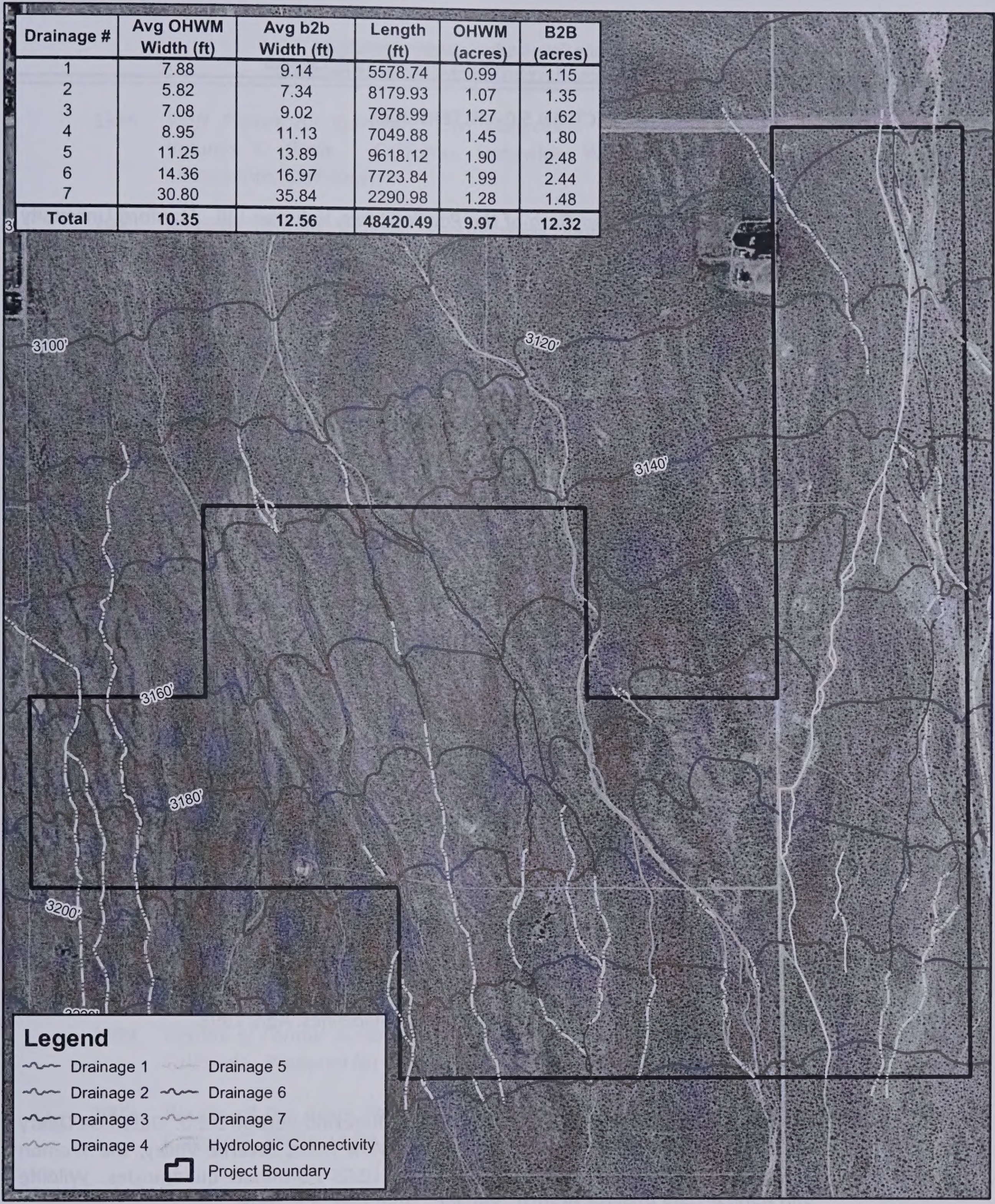
Burrowing owls were not present on the site during the initial surveys; however, burrowing owl sign (i.e., burrows, pellets and white wash) were observed onsite. Although no burrowing owls or new burrowing owl sign was identified during the reconnaissance level and protocol level focused surveys, due to the occurrences in the immediate area, coordination with CDFG regarding this species is recommended for additional surveys and/or mitigation.

4.6. WETLAND AND JURISDICTIONAL DELINEATION

Based on the Formal Jurisdictional Delineation Surveys conducted in April 2009 by Chambers Group, the Chevron Solar Project (Project) site does not contain any wetlands or waters of the United States subject to the regulatory jurisdiction of the USACE pursuant to Section 404 of the Clean Water Act. Pursuant to the 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) decision, isolated waters are not considered subject to the regulatory jurisdiction of the USACE. The Project site does not support riparian vegetation in the form of Disturbed Riparian Scrub habitat, and the area lacks the hydric soils parameters required for definition as USACE Wetlands. The drainages on site show the characteristics of an Ordinary High Water Mark (OHWM); however, the site does not contain TNWs or RPWs and would therefore not be considered USACE jurisdictional Waters of the United States. Although these features would not be subject to the regulatory jurisdiction of the USACE, they would likely be subject to the regulatory jurisdiction of the Regional Water Quality Control Board (RWQCB) pursuant to recent directives of the Governor of California and additional State Water Quality Control Board (SWQCB) orders.

The limits of CDFG jurisdiction are normally larger than the other regulatory agencies because CDFG jurisdiction extends laterally from bank to bank of the stream rather than from the OHWM. Though the drainages were considered to be of poor or low quality to wildlife, primarily due to OHV usage and pedestrian traffic observed within the drainages at the time of the delineation, no aquatic wildlife or aquatic plant species were observed. The drainages within the project site do exhibit defined bank to bank characteristics including 1 to 3-foot shelves on average, and exhibit drainage features including OHWM. Therefore, the Project site would be subject to the jurisdiction of the CDFG pursuant to Section 1602 of the California Fish and Game Code.

Drainage systems on the Project site will be temporarily and permanently impacted by the proposed solar project. No Section 404 Permit will be required from the USACE per the Clean Water Act (CWA). A Section 401 certification and a Section 402 NPDES Permit with the associated Storm Water Pollution Prevention Plan will be required from the RWQCB per the CWA, as impacts to RWQCB jurisdictional waters will result from Project activities. In addition to the 401 and 402 permits, a Streambed Alteration Agreement (SAA) will be required from the CDFG per Fish and Game Code 1602. Mitigation is recommended in association with the Project, as bank to bank impacts will occur, and impacts to CDFG and RWQCB jurisdictional waters will result from Project activities.



Drainage #	Avg OHWM Width (ft)	Avg b2b Width (ft)	Length (ft)	OHWM (acres)	B2B (acres)
1	7.88	9.14	5578.74	0.99	1.15
2	5.82	7.34	8179.93	1.07	1.35
3	7.08	9.02	7978.99	1.27	1.62
4	8.95	11.13	7049.88	1.45	1.80
5	11.25	13.89	9618.12	1.90	2.48
6	14.36	16.97	7723.84	1.99	2.44
7	30.80	35.84	2290.98	1.28	1.48
Total	**10.35**	**12.56**	**48420.49**	**9.97**	**12.32**

Chambers Group Inc.

Chevron Solar Project
Jurisdictional Delineation Drainages
Figure 7

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APPENDIX A – PLANT SPECIES OBSERVED ONSITE

Appendix A
Plant Species Observed During the Habitat Assessment on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
GYMNOSPERMS	
EPHEDRACEAE	**EPHEDRA FAMILY**
Ephedra nevadensis	Nevada ephedra
ANGIOSPERMS (DICOTYLEDONS)	
ASTERACEAE	**SUNFLOWER FAMILY**
Ambrosia dumosa	burro bush
Chaenactis sp.	pincushion
Hymenoclea salsola	burrobrush
Lepidospartum squamatum	scale-broom
Machaeranthera sp.	tansyaster
BORAGINACEAE	**BORAGE FAMILY**
Amsinckia tesselata	devil's lettuce
Cryptantha pterocarya	wingnut cryptantha
BRASSICACEAE	**MUSTARD FAMILY**
Descurainia pinnata ssp. *glabra*	blunt tansymustard
Lepidium fremontii var. *fremontii*	desert peppergrass
*Sisymbrium irio**	London rocket
CACTACEAE	**CACTUS FAMILY**
Opuntia basilaris var. *basilaris*	beavertail cactus
Opuntia echinocarpa	golden cholla
Opuntia ramosissima	pencil cholla
CAPPARACEAE	**CAPER FAMILY**
Isomeris arborea	bladderpod
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
Atriplex canescens	four-wing saltbush
Krascheninnikovia lanata	winter fat
FABACEAE	**LEGUME FAMILY**
Astragalus sp.	astragalus
GERANIACEAE	**GERANIUM FAMILY**
*Erodium cicutarium**	red-stemmed filaree
HYDROPHYLLACEAE	**WATERLEAF FAMILY**
Phacelia sp.	phacelia
KRAMERIACEAE	**RHATANY FAMILY**
Krameria erecta	littleleaf rhatany
LOASACEAE	**LOASA FAMILY**
Mentzelia obscura	Pacific blazingstar
Petalonyx thurberi	sandpaper plant
MALVACEAE	**MALLOW FAMILY**
Sphaeralcea ambigua	desert mallow
NYCTAGINACEAE	**FOUR O'CLOCK FAMILY**
Mirabilis sp.	wishbone bush
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Camissonia sp.	camissonia

Appendix A (Continued)
Plant Species Observed During the Habitat Assessment on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
POLEMONIACEAE	**PHLOX FAMILY**
Eriastrum sapphirinum	sapphire eriastrum
POLYGONACEAE	**BUCKWHEAT FAMILY**
Eriogonum deflexum	flat-topped buckwheat
Eriogonum fasciculatum	California buckwheat
RANUNCULACEAE	**BUTTERCUP FAMILY**
Delphinium sp.	larkspur
ROSACEAE	**ROSE FAMILY**
Coleogyne ramosissima	blackbush
SCROPHULARIACEAE	**FIGWORT FAMILY**
Castilleja sp.	Indian paintbrush
SOLANACEAE	**NIGHTSHADE FAMILY**
Lycium sp.	box-thorn
ZYGOPHYLLACEAE	**CALTROP FAMILY**
Larrea tridentata	creosote bush
ANGIOSPERMS (MONOCOTYLEDONS)	
AGAVACEAE	**AGAVE FAMILY**
Yucca brevifolia	Joshua tree
POACEAE	**GRASS FAMILY**
Pleuraphis rigida	big galleta
*Schismus barbatus**	Mediterranean schismus
*** Non-native species.**	

Appendix A
Plant Species Observed During the Focused Plant Survey on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
GYMNOSPERMS	
EPHEDRACEAE	**EPHEDRA FAMILY**
Ephedra nevadensis	Nevada ephedra
Ephedra viridis	green ephedra
ANGIOSPERMS (DICOTYLEDONS)	
ASTERACEAE	**SUNFLOWER FAMILY**
Acamptopappus sphaerocephalus	rayless goldenhead
Ambrosia dumosa	burro bush
Anisocoma acaulis	scalebud
Baileya pleniradiata	wooly marigold
Calycoseris parryi	yellow tackstem
Chaenactis fremontii	desert pincushion
Chaenactis macrantha	bighead dustymaiden
Chaenactis stevioides	desert pincushion
Chrysothamnus sp.	rabbitbrush
Encelia actoni	Acton daisy
Eriophyllum wallacei	Wallace's woolly daisy
Glyptopleura marginata	crustleaf
Gutierrezia microcephala	sticky snakeweed
Hymenoclea salsola	burrobrush
Lepidospartum squamatum	scale-broom
Machaeranthera sp.	tansyaster
Malacothrix glabrata	desert dandelion
Monoptilon sp.	desert star
Palafoxia arida var. *arida*	Spanish needles
Prenanthella exigua	thorny skeleton plant
Psathyrotes annua	annual turtleback
Rafinesquia neomexicana	desert chicory
Stephanomeria exigua ssp. *exigua*	small wreathplant
Stephanomeria parryi	Parry rock pink
Stephanomeria pauciflora var. *pauciflora*	wire lettuce
Xylorhiza tortifolia var. *tortifolia*	Mojave aster
BORAGINACEAE	**BORAGE FAMILY**
Amsinckia tesselata	devil's lettuce
Cryptantha circumscissa	cushion catseye
Cryptantha pterocarya var. *pterocarya*	winged-nut forget-me-not
Tiquilia plicata	plicate tiquilia
BRASSICACEAE	**MUSTARD FAMILY**
Brassica tournefortii	wild turnip
Descurainia pinnata ssp. *glabra*	western tansymustard
Dithyrea californica	spectacle pod
Lepidium densiflorum	common pepperweed
Lepidium fremontii	desert peppergrass
*Sisymbrium irio**	London rocket
Stanleya pinnata var. *pinnata*	prince's plume

Appendix A (Continued)
Plant Species Observed During the Focused Plant Survey on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
CACTACEAE	**CACTUS FAMILY**
Echinocactus polycephalus var. *polycephalus*	cottontop cactus
Opuntia basilaris var. *basilaris*	beavertail cactus
Opuntia echinocarpa	golden cholla
Opuntia ramosissima	pencil cholla
CAMPANULACEAE	**BELLFLOWER FAMILY**
Nemacladus glanduliferus var. *orientalis*	glandular thread plant
Parishella californica	parishella
CAPPARACEAE	**CAPER FAMILY**
Isomeris arborea	bladderpod
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
Atriplex canescens	four-wing saltbush
Grayia spinosa	spiny hopsage
Krascheninnikovia lanata	winter fat
*Salsola tragus**	Russian thistle
FABACEAE	**LEGUME FAMILY**
Astragalus didymocarpus var. *dispermus*	dwarf white milk-vetch
Astragalus lentiginosus var. *variabilis*	freckled milkvetch
Astragalus sp.	astragalus
Psorothamnus fremontii	Fremont's dalea
GERANIACEAE	**GERANIUM FAMILY**
*Erodium cicutarium**	red-stemmed filaree
HYDROPHYLLACEAE	**WATERLEAF FAMILY**
Nama demissum var. *demissum*	purplemat
Phacelia crenulata var. *crenulata*	cleftleaf wildheliotrope
Phacelia crenulata var. *minutiflora*	phacelia
Phacelia sp.	phacelia
KRAMERIACEAE	**RHATANY FAMILY**
Krameria erecta	littleleaf rhatany
LAMIACEAE	**MINT FAMILY**
Salazaria mexicana	bladder sage
Salvia columbariae	chia
LOASACEAE	**LOASA FAMILY**
Mentzelia albicaulis	whitestem blazingstar
Mentzelia eremophila	pinyon blazingstar
Petalonyx thurberi ssp. *thurberi*	Thurber's sandpaper plant
MALVACEAE	**MALLOW FAMILY**
Sphaeralcea ambigua var. *rugosa*	desert globemallow
NYCTAGINACEAE	**FOUR O'CLOCK FAMILY**
Abronia pogonantha	white sand verbena
Abronia villosa var. *villosa*	sand verbena
Mirabilis bigelovii var. *bigelovii*	wishbone bush

Appendix A (Continued)
Plant Species Observed During the Focused Plant Survey on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Camissonia boothii ssp. *desertorum*	desert suncup
Camissonia claviformis ssp. *aurantiaca*	brown-eyed evening primrose
PAPAVERACEAE	**POPPY FAMILY**
Argemone corymbosa	prickly poppy
Eschscholzia minutiflora	pygmy goldenpoppy
POLEMONIACEAE	**PHLOX FAMILY**
Eriastrum diffusum	miniature woollystar
Gilia latiflora	hollyleaf gilia
Linanthus aureus ssp. *decorus*	golden desert trumpets
Loeseliastrum matthewsii	desert calico
Loeseliastrum schottii	Schott's calico
POLYGALACEAE	**MILKWORT FAMILY**
Polygala acanthoclada	desert polygala
POLYGONACEAE	**BUCKWHEAT FAMILY**
Chorizanthe brevicornu	brittle spineflower
Chorizanthe rigida	spiny chorizanthe
Eriogonum deflexum ssp. *deflexum*	flat-topped buckwheat
Eriogonum fasciculatum var. *polifolium*	California buckwheat
Eriogonum inflatum	desert trumpet
Eriogonum maculatum	buckwheat
Eriogonum nidularium	birdnest buckwheat
Eriogonum pusillum	buckwheat
Oxytheca perfoliata	oxytheca
RANUNCULACEAE	**BUTTERCUP FAMILY**
Delphinium parishii ssp. *parishii*	Parish's larkspur
ROSACEAE	**ROSE FAMILY**
Coleogyne ramosissima	blackbrush
Prunus fasciculata	desert almond
Prunus fremontii	desert apricot
SCROPHULARIACEAE	**FIGWORT FAMILY**
Castilleja miniata ssp. *miniata*	giant red Indian paintbrush
SOLANACEAE	**NIGHTSHADE FAMILY**
Lycium fremontii	Fremont desert thorn
Lycium sp.	box-thorn
ZYGOPHYLLACEAE	**CALTROP FAMILY**
Larrea tridentata	creosote bush
ANGIOSPERMS (MONOCOTYLEDONS)	
LILIACEAE	**LILY FAMILY**
Yucca brevifolia	Joshua tree

Appendix A (Continued)
Plant Species Observed During the Focused Plant Survey on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
POACEAE	**GRASS FAMILY**
Achnatherum hymenoides	Indian rice-grass
Bromus madritensis ssp. *madritensis**	compact brome
*Bromus tectorum**	cheat grass
*Hordeum murinum**	glaucous foxtail barley
Pleuraphis rigida	big galleta
*Schismus barbatus**	Mediterranean schismus
***Non-Native Species**	

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APPENDIX B – BIOLOGIST RESUMES

KRIS ALBERTS

Senior Biologist

Mr. Alberts has 12 years of experience with a comprehensive background in conducting and managing biological surveys. As a senior wildlife biologist, he has conducted surveys for least Bell's vireo, coastal California gnatcatcher, burrowing owl, southwestern willow flycatcher, summer tanager, yellow warbler, nesting raptors, Stephen's kangaroo rat, Quino checkerspot butterfly, coast range newt, California red-legged frog, arroyo toad, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, and desert tortoise. He has conducted nest monitoring for federally and state- listed species as well as baseline, reconnaissance-level, habitat assessment, and detailed wildlife surveys. He has also conducted diurnal and nocturnal bat surveys, bat exclusions, bat house installation and monitoring, in-stream assessments, and fish surveys. His experience also includes small mammal, reptile, and brown-headed cowbird trapping.

As a senior botanist, he has worked extensively in many southern California vegetation communities conducting line transect, point intercept, and stacked cube sampling, community mapping, species identification, and focused surveys (including spreading navarretia, Santa Ana River woollystar, slender-horned spineflower, Parry's spineflower, Plummer's mariposa lily, Algodones Dunes sunflower, Peirson's milk-vetch, Engelmann oak, Del Mar manzanita, and threadleaf brodiaea). He has performed vernal pool, riparian and coastal sage scrub restorations as well as exotic species removal programs. Combining his wildlife skills with his botany skills, he has conducted habitat assessments and focused wildlife surveys throughout San Diego, Orange, Los Angeles, San Bernardino, Riverside, and Imperial Counties. As a wetland scientist, he has performed wetland delineations and jurisdictional determinations in Mentone, Crafton, Diamond Bar, San Clemente, and the Salton Sea area of Riverside County and served as an assistant and project manager on numerous other delineation projects. Mr. Alberts has also investigated environmental impacts to existing or potential biological resources by construction activities, noise, and proposed developments. He has assisted with the implementation of mitigation programs for large-scale projects and mitigation compliance throughout southern California. He has authored and assisted with numerous biological documents, including reports on long-term federal projects and Biological Assessments for Section 7 consultation with USFWS. As a wildlife biologist, botanist, and group manager for previous federal projects, his responsibilities have included survey coordination, staff supervision, data collection, technical report writing, interacting effectively with resource/regulatory agency personnel, maintaining client communication, and meeting project deadlines.

Relevant Experience (Continued)

Key Strengths

- 12 years of Experience in Southern California
- Focused/Protocol Plant and Wildlife Surveys
- Biological Resource Analysis and Management
- Field Crew Management
- Wetland/Jurisdictional Delineations
- San Diego County Multiple Species Conservation Plan (MSCP)
- Multiple Methods of Vegetation Sampling
- Vegetation Mapping
- Extensive Knowledge of Flora and Fauna of Southern California
- Biological Assessments (Section 7)
- Habitat Restoration Programs
- Construction Mitigation Monitoring
- Extensive Working Knowledge of Regulations/ Guidelines:
- -Endangered Species Act
- -Clean Water Act
- -U.S. Fish and Wildlife Service
- -California Dept. of Fish and Game
- -U.S. Army Corps of Engineers
- Section 1602/401/404 permitting

Relevant Experience

Chevron Solar Project, Lucerne Valley, San Bernardino, California. Senior Biologist. Chevron proposes to develop a 516-acre solar photovoltaic power project in the Lucerne Valley. The plant will consist of crystalline silicon PV modules mounted upon single-axis trackers. Conducted Phase II: Burrow Survey for the burrowing owl, a California Species of Concern (CSC) and BLM sensitive species, according to the Burrowing Owl Survey Protocol and Mitigation Guidelines prepared by the California Burrowing Owl Consortium. Conducted Presence/Absence and Zone of Influence Surveys for the desert tortoise in accordance with protocols set forth by the U.S. Fish and Wildlife Service (USFWS 1992). Seven tortoises were identified during the surveys. Conducted avian point count surveys, and assisted with Mohave ground squirrel habitat assessment. Identified and delineated areas of the project site that fell under the regulatory jurisdiction of the USACE pursuant to Section 404 of the Federal Clean Water Act, CDFG jurisdiction pursuant to Section 1602. A Jurisdictional Delineation Report for the project site was completed after the field surveys describing the limits of jurisdiction pursuant to USACE, CDFG, and SWRCB (401). Permit applications for State Water Resources Control Board (SWRCB - 401), USACE (404) and CDFG (1600) will be submitted for project approval.

Environmental Assessment/Initial Study/Mitigated Negative Declaration, Fiber Optic Cable Installation, Victorville, CA to Las Vegas, NV, San Bernardino and Clark County – AT&T, sub to Forkert Engineering & Surveying, Inc. Senior Biologist. Conducted presence/absence surveys for the federal- and state-listed threatened desert tortoise in accordance with protocol set-forth by the USFWS. The project involves permitting applications, conducting biological surveys, vegetation mapping and jurisdictional delineations. Conducted general biological reconnaissance surveys to map the vegetation communities, to document the existing biological resources and to assess the habitat for its potential to support sensitive plant and wildlife species. Identified and delineated areas of the project site that fell under USACE, RWQCB, and CDFG jurisdiction. Monitored construction activities from Primm Nevada to Sloan.

Regulatory Agency Coordination, Background Data Review, Biological Reconnaissance, Protocol Surveys for Mohave Ground Squirrel, Burrowing Owl, and Desert Tortoise, Rosamond, Kern County – Capital Pacific Homes Inc. Chambers Group assisted Capital Pacific Homes with coordination and negotiations with regulatory and planning agencies with jurisdiction over the proposed residential development. Chambers Group conducted protocol surveys for the Mohave ground squirrel, burrowing owl, and the desert tortoise on this Mojave Desert Site. The project required review of previous biological studies of the site and the region and review of information available from the regulatory agencies files. The previous studies were updated with the results of the protocol sampling program.

Matthews Homes Development Project, San Bernardino County. Senior Biologist. Conducted focused surveys for the 88-acre development project. Project required a CDFG 2081 permit for the take of Mohave ground squirrel and burrowing owl. Conducted focused burrowing owl surveys, Zone of Influence surveys for the state- and federal-listed threatened desert tortoise, construction monitoring, 2081 permit compliance, and

Relevant Experience (Continued)

Education

B.S., Natural Resources and Environmental Sciences, University of Illinois, Urbana-Champaign; 1996

Registration

Authorized for coastal California gnatcatcher, Southwestern willow flycatcher, and least Bell's vireo, USFWS Permit #TE-039640-2

California Dept. of Fish & Game Scientific Collector's Permit #SC-009155

Flat-tailed Horned Lizard authorization to take, possess and transport, 2007

Desert Tortoise Council Survey Techniques Workshop, 2007

Southwestern Willow Flycatcher Survey Training, Southern Sierra Research Station, 2007

Wetland Training Institute certified, 2007

mitigation reports. Burrowing owl was identified during the surveys and the appropriate coordination with CDFG was initiated.

Construction Monitoring and Biological Surveys, Water Pipeline Installation Project, MCB Camp Pendleton, San Diego County – Orion. Provided construction monitoring for the installation of 5.5 miles of fiber optic backbone on MCB Camp Pendleton. Backbone installation involved Horizontal Directional Drilling (HDD) under the Santa Margarita River. The project passed through sensitive habitat including riparian vegetation that provide habitat for threatened or endangered species including the southwestern willow flycatcher, least Bell's vireo and arroyo southwestern toad; focused surveys were conducted in the project area for each of these sensitive species. Pre-construction nesting bird surveys were conducted prior to ground-breaking activities, and vegetation removal monitoring was provided concurrently with willow tree relocation.

Natural and Cultural Resources Management Plan, Rancho Las Flores Development, Hesperia, San Bernardino County – Rancho Las Flores, LLC. Senior Biologist. Assisted in revising outdated documents. Conducted field surveys on the project site prior to construction activities involving heavy equipment and/or windrow tree removal to determine if active nests of species protected by the Migratory Bird Treaty Act (MBTA) or by the California Department of Fish and Game (CDFG) were present in the construction zone or within a buffer of 500 feet. Pre-construction nesting/breeding surveys were conducted in all CDFG jurisdictional areas and within windrow trees.

Pre-Construction Surveys, Cleveland Avenue, Ontario, San Bernardino County – Brookfield Homes. Senior Biologist. Conducted field surveys on the project site prior to construction activities involving heavy equipment and/or windrow tree removal to determine if active nests of species protected by the Migratory Bird Treaty Act (MBTA) or by the California Department of Fish and Game (CDFG) were present in the construction zone or within a buffer of 500 feet. Pre-construction nesting/breeding surveys were conducted in all CDFG jurisdictional areas and within windrow trees.

Biological Survey and Cultural Resources Construction Monitoring, Fairfax Interchange Improvement, Bakersfield, Kern County – City of Bakersfield Public Works, sub to Parsons. Perform pre-construction biological monitoring of San Joaquin Kit Fox, burrowing owls and raptor nests and cultural resource construction monitoring associated with the Thomas Road Improvement Fairfax Interchange Project.

Initial Study, Lasselle Street Widening from John F. Kennedy Drive to Alessandro Boulevard, Moreno Valley – City of Moreno Valley, sub to PSOMAS. Provided jurisdictional determination. Conducted a habitat assessment from John F. Kennedy Dr. to just past Alessandro Blvd. along Lasselle St. Habitat suitable for the burrowing owl was present on the project site and so a Focus Burrow Survey for the burrowing owl will be required according to the western Riverside MSHCP. Co-authored the biological report documenting the findings of the habitat assessment. A Focused Burrow Survey was conducted during the breeding season for the burrowing owl. Wrote the report of findings of the Focused Burrow Survey.

LAURA GORMAN

Associate Biologist

Ms. Gorman's diverse background in wildlife biology includes experience in a variety of habitats including marine, coastal sage, salt marsh, and riparian. She follows current survey protocols to perform vegetation and wildlife inventories and functional analysis surveys. She is knowledgeable in field identification of avian, amphibian, and fish species. Her strengths include conducting reconnaissance-level biological surveys, pre-construction surveys, focused surveys, and constructing monitoring for threatened wildlife such as the western snowy plover and burrowing owl. She has conducted presence/absence surveys for the California red-legged frog, mountain yellow-legged frog, and arroyo toad, and has assisted permitted biologists with focused surveys and nest monitoring for the California gnatcatcher and least bell's vireo. In addition, she has extensive experience in sensitive species relocation, particularly relating to Santa Ana sucker, Santa Ana speckled dace, arroyo chub, and coast range newt.

Key Strengths

- Biological Resources Surveys
- Environmental documentation preparation
- Construction Monitoring
- Jurisdictional Delineations
- Vegetation Mapping

Relevant Experience

DESERT TORTOISE

Chevron Solar Project, Lucerne Valley, San Bernardino, California. Associate Biologist. Chevron proposes to develop a 516-acre solar photovoltaic power project in the Lucerne Valley. The plant will consist of crystalline silicon PV modules mounted upon single-axis trackers. Conducted Phase II: Burrow Survey for the burrowing owl, a California Species of Concern (CSC) and BLM sensitive species, according to the Burrowing Owl Survey Protocol and Mitigation Guidelines prepared by the California Burrowing Owl Consortium. Conducted Presence/Absence and Zone of Influence Surveys for the desert tortoise in accordance with protocols set forth by the U.S. Fish and Wildlife Service (USFWS 1992). Seven tortoises were identified during the surveys. Conducted avian point count surveys, and assisted with Mohave ground squirrel habitat assessment. Identified and delineated areas of the project site that fell under the regulatory jurisdiction of the USACE pursuant to Section 404 of the Federal Clean Water Act, CDFG jurisdiction pursuant to Section 1602. A Jurisdictional Delineation Report for the project site was completed after the field surveys describing the limits of jurisdiction pursuant to USACE, CDFG, and SWRCB (401). Permit applications for State Water Resources Control Board (SWRCB - 401), USACE (404) and CDFG (1600) will be submitted for project approval.

Surveys for the Environmental Assessment/Initial Study/Mitigated Negative Declaration, Fiber Optic Cable Installation, Victorville, CA to Las Vegas, NV, San Bernardino and Clark County – AT&T, sub to Forkert Engineering & Surveying, Inc. The project involves permitting applications, conducting biological surveys, vegetation mapping and jurisdictional delineations from the City of Victorville to Las Vegas. Conducted general biological reconnaissance surveys to map the vegetation communities, to document the existing biological resources and to assess the habitat for its potential to support sensitive plant and wildlife species. Conducted presence/absence surveys for the federal- and state-listed threatened desert tortoise (*Gopherus agassizii*) in accordance with protocol set-forth by the U.S. Fish and Wildlife Service (USFWS, 1992). Sign of desert tortoises including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks were recorded.

AT&T Fiber Optic Cable – Las Vegas to Victorville Project, Multiple County – AT&T, sub to Forkert Engineering & Surveying, Inc. Conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources; and assess the habitat's potential to support sensitive plant and wildlife species. Coordinated with BLM to prepared and compose a Noxious

Relevant Experience (Continued)

Weed Management Plan and a Habitat Restoration Plan. Provided construction monitoring in accordance with project permits for the protection of the desert tortoise. Prepared post-construction desert tortoise monitoring and environmental compliance reports. Provided environmental awareness training for all individuals involved with the project. Presence/absence desert tortoise surveys were conducted in California from Stoddard Wells Rd. in Victorville to Slash X Ranch, from Halloran Summti Rd. to Cima Rd. in Baker, and From Nipton Rd, to State Line (Primm, Nevada). Surveyed the project area and the 100 ft. and 300 ft. ZOI transect lines. Tortoise burrows, scat, and a scute were observed in various places along the route. Surveys followed protocol set out by USFWS. Detailed notes and GPS points were recorded when any desert tortoise sign was observed or detected. Conducted construction monitoring from Los Vegas, Nevada to Primm, Nevada. Conducted nesting bird surveys, and assisted with clearance surveys for the desert tortoise. Monitoring included trenching, pipe installation, backfilling, restoration, compaction, vault installation, proofing, cable pulling, splicing, and post installation/replacement. Eighteen tortoises were found along the project site in Nevada and only three had to be handled, in order to be moved away from the approaching construction equipment.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Associate Biologist. The project involves conducting biological surveys, vegetation mapping and wetland delineations along 100-mile-long corridor. Services include a reconnaissance surveys, focused sensitive species surveys (Yuma clapper rail surveys, California black rail surveys, least Bell's vireo, southwestern willow flycatcher, Coachella Valley fringe-toed lizard surveys, desert tortoise presence/ absent surveys, desert pupfish, Peirson's milk vetch surveys, and Algodones Dunes sunflower surveys), and vegetation communities surveys and mapping within the 200-foot right-of-way. The field survey focuses primarily on determining the potential habitat for federal- and state-listed plant and wildlife species. Performed construction monitoring services over many sections of the route.

Regulatory Agency Coordination, Background Data Review, Biological Reconnaissance, Protocol surveys for Mohave Ground Squirrel, Burrowing Owl, and Desert Tortoise, Rosamond, Kern County – Capital Pacific Homes Inc. Conducted a focused survey for the desert tortoise and burrowing owl. Walked transects by foot in order to cover 100% of the project site. Conducted transects for the zone of influence (ZOI) at 100, 300, 600, 1200, and 2400ft.

Desert Tortoise Clearance Surveys, Palmdale Water Reclamation Plant Stage 5 Effluent Management Facilities, Palmdale, Los Angeles County – Los Angeles County Sanitation District. The Palmdale Water Reclamation Plant Stage Five Effluent Management Facilities project involves construction of storage reservoirs. As part of USFWS approval, the Districts have committed to install a fence around the storage reservoirs to keep tortoises out. Clearance surveys will be performed within the area upon completion of the fence to ensure desert tortoises have not been trapped inside the fenced area. This desert tortoise clearance survey within the fenced area will follow the appropriate USFWS protocol.

BURROWING OWL

Protocol-level MSHCP Burrowing Owl Survey, Calimesa, Riverside County – Sunlite Development. Task Manager. Conducted a four-day protocol-level survey for burrowing owl. Recorded GPS locations of potential burrow sites and examined all suitable habitat for sign of live owls. Reported all results in an updated habitat assessment of the project site.

Phase II Burrowing Owl Survey, Etiwanda Housing Development, Rancho Cucamonga, San Bernardino County – Sierra Pacific Enterprises. Conducted a Phase II Burrowing Owl survey over a 115-acre site proposed for development in the City of Etiwanda, CA. Active burrowing owl burrows were identified and their locations were recorded using GPS technology. Prepared a report of findings.

Relevant Experience (Continued)

Medical Real Estate Development, Riverside County. Project Manager. Conducted Phase III burrowing owl surveys for the Medical Real Estate Development located in Sun City (APNs: 333-050-012-9, 333-050-009-7, 333-050-010-7, & 333-050-011-8), Riverside County, California. The 10-acre site was surveyed for burrowing owl and nesting birds, and consisted of 4 separate site visits one-hour before sunrise to two-hours after sunrise for four non-consecutive days. No owls were identified using the burrows. A memo report was sent to local Agencies and DFG.

Education

B.S., Biology, University of California, Los Angeles; 2004

Registration

California Dept. of Fish and Game Scientific Collector's Permit # SC 008778

United States Fish and Wildlife Service Office, Carlsbad Branch, Passed Quino Checkerspot Butterfly (QCB) Exam to Conduct Surveys under Permitted QCB Biologist, February 11, 2009.

Rancho Santa Ana Botanical Garden Botany Course, February 2009

Rancho Santa Ana Botanical Garden Plant Survey Techniques Course, February 2009

BLM Flat-Tailed Horned Lizard Training, May 2007

Desert Tortoise Council Surveys Techniques and Handling Workshop, November 2006

Earth Skills Tracking Skills Workshop, Fall 2006

Sea and Sage Audubon Society Advanced Bird Observation Class, Spring 2007

Sea and Sage Audubon Society Bird Identification Class, Spring 2006

Sea and Sage Audubon Society Bird Sound Identification Class, Fall 2006

Southern Sierra Research Station Southwestern Willow Flycatcher Workshop, May 2005

Nesting Bird and Burrowing Owl Survey, Lancaster, Los Angeles County – Matthews Homes. Conducted a focused survey for nesting birds and burrowing owls throughout the project site utilizing approximately 30- or 100-foot belt transects, depending on the density of vegetation. Potential habitat for nesting birds and burrowing owl within the project site and within a 150-meter buffer around the site was surveyed according to protocol approved by the CDFG (Burrowing Owl Consortium, 1993). Evidence of nesting birds and/or burrowing owl within the project site was documented with digital photographs, Global Positioning System (GPS) coordinates, and markings on a topographic map.

Phase III Burrowing Owl Survey, Village Park, San Jacinto, Riverside County – Distinguished Homes. Conducted a Phase III Burrowing Owl survey for a proposed residential development project known as Village Park in the City of San Jacinto (Tract No. 31806), Riverside County, California. The three-day protocol-level survey consisted of belt transects to allow for 100% visual coverage of the project site. The City of San Jacinto required CEQA compliance documents for this project. Chambers Group's analysis of the project resulted in the preparation of an Initial Study/Mitigated Negative Declaration (IS/MND) which included biological and air quality technical studies and reports.

NESTING BIRDS

Nesting Bird Survey, Cooks Canyon Crib Dam Reconstruction, Glendale, Los Angeles County – Los Angeles County Department of Public Works, Environmental Planning. Conducted a survey for nesting birds protected by the Migratory Bird Treaty Act of 1918. The surveys were required in support of services for removal of sediment buildup within the Cooks Canyon Crib Dam Debris Basin. Sediment buildup has impaired the drainage of waters from the debris basin, resulting in year-round ponding. Recorded all observations in the field on standardized datasheets. The results of the survey were summarized in a memorandum report, which included recommendations to minimize potential impacts to nest sites.

Construction Monitoring, Arroyo Trabuco Creek Railroad Bridge Replacement, San Juan Capistrano, Orange County – Southern California Regional Rail Authority. Monitored compliance of activities with the 1600 Streambed Alteration Agreement during the replacement of the railroad bridge above Arroyo Trabuco Creek. Conducted preconstruction surveys for nesting birds and bats. Monitored vegetation removal and protection of the creek during construction.

Environmental Compliance Services, Pacific Street Bridge, Oceanside, San Diego County – City of Oceanside, sub to Harris & Associates. Conducted periodic nesting bird surveys, fish seining, and construction monitoring for the Pacific Street Bridge construction site in the City of Oceanside. Provided results in detailed monitoring

Relevant Experience (Continued)

reports to the client. Chambers Group was a member of the construction management team (Harris & Associates) for the construction of the Pacific Street bridge. This bridge replaces an earthen crossing near the mouth of the San Luis Rey River adjacent to the Oceanside Harbor. Chambers Group is responsible for environmental aspects during the bidding process for the construction contractor. Chambers Group staff conducted monitor services during construction to assure compliance with the Environmental Impact Report (EIR) and all environmental permits. These permits addressed the U.S. Army Corps of Engineers (USACE) concerns in the waters of the United States and also the San Luis Rey River is a flood control channel. California Department of Fish and Game (CDFG) 1602 permit and a U.S. Fish and Wildlife (USFWS) Section 7 addressed the protected species in the project area. The San Diego Regional Water Quality Control Board (RWQCB) has issued a 401 permit. Chambers Group prepared a Mitigation Monitoring Implementation Plan, Environmental Awareness Program and conducted environmental compliance monitoring during the two year construction period for the bridge.

Least Bells' Vireo and Southwestern Willow Flycatcher Biological Surveys, SR-60 and Grand Avenue Interchange Improvement Project, Diamond Bar, Los Angeles County – EIP Associates, a Division of PBS&J, sub to Sage Environmental Group. Chambers Group biologists conducted presence/absence focused surveys for southwestern willow flycatcher and least Bell's vireo at a section of Diamond Bar Creek known as Brea Wash and three tributaries that flow into the wash from under the freeway. All potential habitats within the project site were surveyed and nesting status of each pair was documented. Maps included project location and observed species locations and individual nest sites where found.

Cantu-Gallaeno at I-15 Exchange Project, Corona, Riverside County – Riverside County Transportation Department, sub to Harris & Associates. Conducted Habitat Assessment for the burrowing owl on a 38-acre project site prior to grading for road extension. Upon locating a burrowing owl on site, conducted phase III focused surveys to determine if the bird was nesting or wintering on site. The surveys were done in accordance with the California Burrowing Owl Consortium guidelines (1993). A biological technical report of findings was prepared.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Conducted least bell's vireo, burrowing owl, and desert tortoise focused surveys, a southwestern willow flycatcher habitat assessment, and wetland delineation along a 100-mile-long stretch of railway. Located and documented possible desert tortoise burrow and sign as well as burrowing owl sign including burrow sites, pellets, scat, and live owl sightings. Identified areas of suitable habitat along the 100-mile stretch for southwestern willow flycatcher focused surveys.

Scoping of CEQA Compliance and Permitting Issues for the Dana Point Desalination Facility, Dana Point, Orange County – Municipal Water District of Orange County. Conducted construction monitoring for the western snowy plover during the installation of a test slant well drill adjacent to the San Juan Creek mouth. Construction was halted if the western snowy plover approached the drilling site. Wildlife presence/absence and nesting location surveys of other avian species were also performed.

LISA WADLEY

Staff Wildlife Biologist

Ms. Wadley has over six years of experience and a comprehensive background in conducting biological surveys, implementing surveys for regional habitat conservation plans such as the Western Riverside MSHCP, and mitigation monitoring. She has a comprehensive background in biological resources assessment, habitat conservation planning, and raptor management. As a wildlife biologist, she has conducted surveys for nesting raptors, western burrowing owl, coastal California gnatcatcher, kit fox, desert tortoise, and sensitive plant and habitat communities. She has also conducted reconnaissance-level and detailed wildlife surveys, investigated environmental impacts in terms of biological resources, and assisted with the implementation of mitigation programs for various-sized projects, and performed restoration and mitigation compliance throughout San Bernardino, Riverside, and Los Angeles counties.

Key Strengths

Determined species potentials to occur on project sites and make recommendations accordingly.

Conducted background research and data collection (i.e. literature and aerial photographs) in order to make appropriate evaluations.

Created raptor data dictionary for GPS for use in conducting raptor nest surveys and burrowing owl focused surveys.

Regular attendant at the Burrowing Owl Consortium symposium and meetings, the Wildlife Society conferences and courses, Advanced Raptor Identification workshops, and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) workshops and meetings.

Have written reports and associated documents in an accurate and thorough manner.

Relevant Experience

AT&T Fiber Optic Cable – Las Vegas to Victorville Project, Multiple County – AT&T, sub to Forkert Engineering & Surveying, Inc. Chambers Group conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources; and assess the habitat's potential to support sensitive plant and wildlife species. Provided construction monitoring services in accordance with project permits for the protection of the desert tortoise. Prepared post-construction desert tortoise monitoring and environmental compliance reports.

Biological Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Assisted in presence/absence surveys prior to construction activities. Monitoring and BMP compliance reports were submitted daily during the project.

MSHCP Habitat Assessment, Cactus Avenue Widening Project, Moreno Valley, Riverside County. Chambers Group, Inc., was retained by the City of Moreno Valley to conduct a habitat assessment for burrowing owl (*Athene cunicularia*), Stephen's kangaroo rat (*Dipodomys stephensi*) and sensitive plant species. Chambers Group biologists also assessed the site for vernal pools and potential jurisdictional waters. Authored report summarizing results of the habitat assessment; purpose of the report was to document the results of the habitat assessment, sensitive habitat evaluation, and provide recommendations for MSHCP required focused surveys and was written in accordance with MSHCP guidelines.

Cactus Avenue Widening Project, Focused Western Burrowing Owl Survey, City of Moreno Valley, Riverside County – City of Moreno Valley. Conducted a MSHCP Protocol Burrowing Owl Survey for approximate two mile road widening project from the 215 freeway north on Cactus Avenue to Heacock Street in the City of Moreno Valley. The objective of the surveys was to identify areas where burrowing owls were occupying and/or nesting within or adjacent to the project area. Surveys were conducted throughout the project site utilizing approximately 30- or 100-foot belt transects, depending on the density of vegetation, in order to maintain 100 percent coverage, which is required by the Department of Fish and Game. Any active and inactive nests and/or burrows on site as well as within the 150 foot buffer were recorded on data sheets. A single burrowing owl was observed within the

Education

B.A., Biology, California State University, San Bernardino; 2002

A.S., Agricultural Technology, Mt. San Antonio College, Walnut, California; 1996

Memberships

Association of Environmental Professionals (AEP)

Audubon Society

Burrowing Owl Consortium

Cornell Lab of Ornithology

Cougar Fund

Raptor Research Organization

Western Field Ornithologist

Western Section; Wildlife Society

The Wildlife Society

Relevant Experience (Continued)

150 meter buffer zone. It was determined that the indivdual did not have a mate and was not, at the time of the survey actively nesting. After completing the field surveys, methodology and findings were summarized and incorporated into a memo report.

Burrowing Owl Pre-Construction Survey, Lasselle Street Widening Project, Moreno Valley, Riverside County –City of Moreno Valley. Walked transects according to The Burrowing Owl Consortium guidelines (1993), on appropriate habitat in search for the presence of burrowing owls or any sign of burrowing owls within or adjacent to Lasselle Street Widening project area prior to grading for the widening of the road. No burrowing owls were found and a letter report was written to document the survey.

MSHCP Habitat Assessment, Ironwood Avenue Widening Project, Moreno Valley, Riverside County. Chambers Group, Inc., was retained by the City of Moreno Valley to conduct a habitat assessment for burrowing owl (Athene cunicularia), Stephen's kangaroo rat (Dipodomys stephensi) and sensitive plant species. Assessed the site for vernal pools and potential jurisdictional waters. Authored report summarizing results of the habitat assessment; purpose of the report was to document the results of the habitat assessment, sensitive habitat evaluation, and provide recommendations for MSHCP required focused surveys and was written in accordance with MSHCP guidelines.

Ironwood Avenue Widening Project, Focused Western Burrowing Owl Survey, City of Moreno Valley, Riverside County – City of Moreno Valley. Conducted a MSHCP Protocol Burrowing Owl Survey for approximate two mile road widening project from Perris Boulevard east on Ironwood Avenue to Nanson Street in the City of Moreno Valley. The objective of the surveys was to identify areas where burrowing owls were occupying and/or nesting within or adjacent to the project area. Surveys were conducted throughout the project site utilizing approximately 30- or 100-foot belt transects, depending on the density of vegetation, in order to maintain 100 percent coverage, which is required by the Department of Fish and Game. Any active and inactive nests and/or burrows on site as well as within the 150 foot buffer were recorded on data sheets. No burrowing owl and/or burrows or sign were observed on the project site. No owls were observed in the adjacent buffer zone during the focused survey. After completing the field surveys, methodology and findings were summarized and incorporated into a memo report.

Reche Vista Road Realignment Natural Environmental Study, Moreno Valley, Riverside County. Chambers Group, Inc., was retained by the City of Moreno Valley to conduct a general biological assessment for the realignment of Reche Vista Road in the City of Moreno Valley, Riverside County. The California Department of Transportation (Caltrans - NEPA lead agency) and the City of Moreno Valley (City - CEQA lead agency), County of Riverside, CA, proposed to "fill in" a highway gap by realigning Reche Vista Drive between the Perris Boulevard/Heacock Street Intersection and the northerly Moreno Valley City limits. Authored Natural Environmental Study document summarizing results of the habitat assessments; purpose of the report was to document the results of the habitat assessments, sensitive habitat evaluation, potentential for jurisdictional waters, permitting requirements, and provide recommendations for MSHCP required focused surveys and was written in accordance with MSHCP guidelines and Catrans Natural Environmental Study guidelines.

Nesting Bird Survey, City of Santa Clarita, Los Angeles County – LADPW. Conducting nesting bird surveys for Vasquez Canyon Bouquet Creek Bridge Project. Nesting birds were located and mitigation measures will be monitored during construction activities.

Relevant Experience (Continued)

Nesting Bird Survey and Monitoring, City of Sierra Madre, Los Angeles County – LADPW. Conducting nesting bird surveys along North Sierra Madre Road for two days and conducted construction monitoring.

Nesting Bird Survey, City of Glendale, Los Angeles County – LADPW. Conducting nesting bird surveys in the Cooks Canyon debris basin crib dam M1-A Dewatering system for two weeks, three days each week for a total of six surveys.

LSA Associates, Inc. (LSA). Assistant Wildlife Biologist. Conducted general biological surveys and wildlife habitat assessments, and majority of the western burrowing owl (Athene cunicularia hypugaea) surveys, raptor nesting surveys and monitoring for the LSA Riverside office. Biological monitoring for construction projects; including writing and implementing contractor awareness programs for the burrowing owl, nesting raptors, kangaroo rat, California gnatcatcher, and Least's bell's vireo. Writing biological assessments, biological constraints reports for CEQA compliance, WRCMSHCP compliance, and Caltrans biological reports. Assignments included writing memoranda to clients regarding compliance and recommendations of actions to take on projects. Writing Burrowing Owl Mitigation Plans for compliance with CDFG permits.

Research Experience

Institute for Bird Populations, Statewide Survey of Western Burrowing Owls, Point Reyes Station, California. Volunteer surveyor for San Bernardino County. Surveyed a block in San Bernardino County to aid the Institute in regional and statewide population estimates. Information gathered has and will be important resource for Burrowing Owl conservation efforts in California and has been widely used and cited by government agencies and conservation-oriented non-governmental organizations

San Jacinto Wildlife Area, San Jacinto, California — Western Burrowing Owl Study. Volunteer. Purpose of research: To gain knowledge of the burrowing owl populations on the San Jacinto Wildlife Area. Conducted owl surveys within the wildlife area.

Biological Surveys and Focused Western Burrowing Owl Surveys — Southern California Edison. Conducted general biological assessments and focused burrowing owl surveys for the Southern California Edison's substations in Menifee, Riverside County. Responsible for coordinating, attending meetings, and conducting surveys for expansions of the substations.

Biological Surveys and Monitoring — Southern California Gas Company. Conducted biological assessments and focused avian and mammal surveys for pipeline projects for the Southern California Gas Company in Riverside County. Responsible for conducting pre-construction surveys on the pipeline projects in the City of Riverside. Executed contractor education programs for the listed and sensitive species and nesting birds. Monitored the removal and replacement of pipeline in the streambeds and the placement of revetment pads to reduce flow.

Specialized Training

Federal Fish and Wildlife Permit (MB-119560-0), Special Purpose: Salvage Birds

Festival of Owls Research Workshop, Houston Nature Center, Houston, Minnesota, March 2008

Master Desert Naturalist Certificate, the Living Desert University. The Master Desert Naturalist certificate program offers in-depth instructions in our local desert environment. Feature class content on native flora and fauna, ecology, geology and natural history with an emphasis on direct experience. The classes are a

Relevant Experience (Continued)

blend of informative classroom lectures and discussions, as well as 'real world' experiences; including tracking, and interpretive hikes and walks led by LDU instructors.]

Festival of Owls Research Workshop, Houston Nature Center, Houston, Minnesota, March 2006

Mohave Ground Squirrel Workshop, Western Section of the Wildlife Society, Ridgecrest, April 2005

Habitat Conservation Planning and the Endangered Species Act, University of Riverside Extension Center, January – March 2005

Endangered Species Regulation, Conservation Planning and Permits for Development, UCLA Extension Center, Los Angeles, March 2004

California Environmental Quality Act (CEQA) Workshop, AEP, Fall 2003

California Burrowing Owl Symposium, the Western Section of the Wildlife Society, Sacramento, November 2003

Desert Tortoise Surveying, Monitoring, Workshop, and Handling Techniques Workshop, The Desert Tortoise Council, Ridgecrest, 2003

Chambers Group

NICHOLE CERVIN

Associate Biologist

Ms. Cervin is familiar with the plant communities throughout California and she specializes in the identification and analysis of California vegetation. She has more than four years of experience conducting reconnaissance-level, focused, and quantitative vegetation surveys; mapping vegetation; performing restoration compliance inspections. Ms. Cervin has also authored environmental and biological sections for a variety of documents. In addition, Ms. Ms. Cervin has experience with plant ecology and physiology techniques, and statistical analysis.

Key Strengths

- Vegetation Surveys
- Focused Plant Surveys
- Identification of sensitive plant and wildlife species
- Habitat Restoration
- Weed Identification and Management

Relevant Rare Plant Survey Experience

Focused Plant Surveys For The Federal Bureau of Reclamation within the Upper San Joaquin River, Fresno County, California. Associate Botanist. Conducted protocol focused plant surveys and habitat assessments on a 6,000-acre site in the upper San Joaquin River watershed within the Sierra National Forest, California. The surveys were performed in an effort to determine the presence / absence of sensitive plant species within the project site. The project also involved working with a team of biologists with different backgrounds to determine any possible biological issues and solutions to possible issues for this controversial water storage basin project.

Functional Analysis Comparison Along the San Gabriel River, Los Angeles County -- LACDPW. Assistant Botanist. Collected data for a complete functional analysis, based on the USACE Hydrogeomorphic Analysis and Habitat Evaluation Procedures, within the Angeles National Forest, California. The functional analysis was conducted to assess and compare the biological resources along the length of the San Gabriel River, from the West Fork downstream to the Santa Fe Reservoir Spreading Grounds. Data related to the biological and physical function were collected at each permanent data collection transect location in the upland and riparian habitats of the site.

Focused Plant Survey, Crafton Hills Reservoir Expansion and Pipeline Project, Crafton, San Bernardino County – Department of Water Resources, sub to Environmental Science Associates. Associate Botanist. Conducted a protocol focused plant survey within and adjacent to the project footprint to determine the presence / absence of several sensitive plant species including Santa Ana River woollystar, slender-horned spineflower, Nevin's barberry, Parish's checkerbloom, Parry's spineflower, Plummer's mariposa lily, and other sensitive plant species. A general biological reconnaissance survey was also conducted and included mapping of vegetation communities and a habitat assessment to determine the potential of the site to support sensitive plant species. Following all surveys a Biotechnical Report was prepared that was incorporated into the EIR for this project.

Focused Plant Survey East Branch Extension Phase II Project, San Bernardino, Riverside, Los Angeles County – Department of Water Resources, sub to Environmental Science Associates. Associate Botanist. Conducted a protocol focused survey for sensitive plant species including Santa Ana River woollystar, slender-horned spineflower, Nevin's barberry, Parish's

Relevant Experience (Continued)

checkerbloom, Parry's spineflower, Plummer's mariposa lily, and other sensitive plant species and documented the population size and locations for these species throughout the property. A general biological reconnaissance survey was conducted on four separate alternative proposed pipeline line sites and at two potential reservoir sites. The surveys included vegetation communities mapping and an assessment of the site for its potential to support sensitive plant species. Prepared reports documenting the findings for the alternative project sites.

Biological and Botanical Surveys and Monitoring, Big Dalton Dam Sediment Removal, Glendora, Los Angeles County – Los Angeles County Department of Public Works, Water Resources Division. Associate Biologist. Coordinated and conducted field surveys including vegetation mapping, focused plant surveys, amphibian, reptile, fish, avian, and mammal surveys, stream assessments and macroinvertebrate collections from above the reservoir to 2 miles downstream of the Big Dalton Dam. Data and analysis of the project is provided in the Pre- and Post-Dewatering Biological Technical Report for the Big Dalton Dam Reservoir Cleanout Project.

Biological and Botanical Resources Surveys, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Associate Botanist. Conducted a protocol focused survey for sensitive plant species including Peirson's milk-vetch and Algodones Dunes sunflower in many sections of the 100-mile-long project corridor. Also performed a protocol desert tortoise presence/absents survey along several sections of the corridor. Performed a biological reconnaissance survey and created vegetation communities maps along sections of. The biological reconnaissance focused primarily on determining the potential habitat for federal- and state-listed plant and wildlife species.

Botanical Surveys and Monitoring, Live Oak Reservoir Cleanout Project, La Verne, Los Angeles County – Los Angeles County Department of Public Works, Water Resources Division. Coordinated and conducted field surveys including vegetation mapping and pre–dewatering and post-dewatering vegetation surveys from above the reservoir to 0.5 miles downstream of the Live Oak Dam, which is located within the Angeles National Forest. The two-striped garter snake, a California Species of Concern, was found on the project site, which triggered daily monitoring during construction. No mortalities of sensitive species were observed during construction.

Sierra Conservation Center Jamestown Effluent Disposal Pipeline Project, Jamestown, Tuolumne County – Department of General Services, Real Estate Services Division. Assistant Botanist. Provided biological resources services for the project which included an Oak Tree resources field survey, report, and mitigation and monitoring plan, as well as pre-construction surveys for special status plant species such as Chinese Camp brodiaea, Merced clarkia, Congdon's woolly sunflower, Hatweg's pseudobahia, Layne's ragwort, and California vervain. Habitat assessment surveys were conducted for Valley elderberry longhorn beetle, the hirsute sierra sideband snail, and the California tiger salamander.

Phase II Big Tujunga Wash Mitigation Bank Master Mitigation Plan Implementation, Sunland, Los Angeles County – Los Angeles County

Education

M.S., Biology, California State University, Fullerton; 2006

B.S., Biology, California State University, Fullerton; 2002

Registrations, Certifications, and Affiliations:

California Dept. of Fish and Game Scientific Collector's Permit, #SC-009906

Ecological Society Of America Member, Current

Southern California Botanists Member, Current

Desert Tortoise Surveying Techniques Workshop, Desert Tortoise Council, 2007: qualified desert tortoise monitor

Relevant Experience (Continued)

Department of Public Works. Associate Botanist. Monitored the revegetation enhancement of upland and riparian habitat in the mitigation bank. The revegetation components of the master plan included the restoration of existing riparian habitat by removing exotic plant species and revegetating with native plant species. The plan provided for the creation of coastal sage scrub and oak woodland habitats, and programs were designed to reduce the impact of exotic wildlife species on the native communities. A comprehensive monitoring program was developed for the site, including the use of functional analysis to assess the progress of the restoration efforts. A report summarizing the survey results was submitted after each inspection or combined with larger annual reports.

Habitat Restoration Plan and Monitoring, Newell Road at Fairside Road Project, Malibu, Los Angeles County – Los Angeles County Department of Public Works. Associate Botanist. Performed preliminary soil analyses and determined the types of vegetation that were impacted by a landslide. Assisted the Project Manager with preparing a Planting Plan that included a plant palette and a planting diagram. Co-authored a final Habitat Restoration and Monitoring Plan (HRMP). The HRMP provided site preparation and planting details, nursery and maintenance contractor coordination guidelines, performance standards for the plantings, and reporting requirements. These comprehensive Plans were submitted to the agencies for review and served as the framework for future onsite mitigation efforts.

Environmental Assessment/Initial Study/Mitigated Negative Declaration, Fiber Optic Cable Installation, Victorville, CA to Las Vegas, NV, San Bernardino and Clark County – AT&T, sub to Forkert Engineering & Surveying, Inc. Conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources; and assess the habitat's potential to support sensitive plant and wildlife species. Coordinated with CDFG to identify mitigation measures and monitoring requirements for the desert tortoise and other sensitive species based on the Biological Evaluation in order to streamline the Consistency Determination process. Coordinated with BLM to prepare and compose a Noxious Weed Management Plan and a Habitat Restoration Plan. Provided construction monitoring in accordance with project permits for the protection of the desert tortoise. Prepared post-construction desert tortoise monitoring and environmental compliance reports.

Relevant Rare Plant Species Experience

Fiber Optic Line Installation from the City of Victorville, California to the City of Primm, Nevada – AT&T, sub to Forkert Engineering. Associate Biologist. Conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources; and assess the habitat's potential to support sensitive plant and wildlife species. Coordinated with CDFG to identify mitigation measures and monitoring requirements for the desert tortoise and other sensitive species based on the Biological Evaluation in order to streamline the Consistency Determination process. Coordinated with BLM to prepared and compose a Noxious Weed Management Plan and a Habitat Restoration Plan. Provided construction monitoring in accordance with project permits for the protection of the desert tortoise. Prepared post-construction desert tortoise monitoring and environmental compliance reports.

Relevant Experience (Continued)

AT&T - Environmental Assessment/Initial Study/Mitigated Negative Declaration Studies, Fiber Optic Cable Installation Monitoring, Victorville, CA to Las Vegas, NV, San Bernardino and Clark County – AT&T, sub to Forkert Engineering & Surveying, Inc. Conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources; and assess the habitat's potential to support sensitive plant and wildlife species. Coordinated with BLM to prepare and compose a Noxious Weed Management Plan and a Habitat Restoration Plan. Provided construction monitoring in accordance with project permits for the protection of the desert tortoise. Prepared post-construction desert tortoise monitoring and environmental compliance reports. Provided monitoring services during the construction activities over a 4 month period. 18 tortoises were identified and avoided during construction activities. Lead for succulent translocations during construction.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Associate Botanist. Performed biological reconnaissance surveys and vegetation mapping along sections of a 100-mile-long corridor within the 200-foot right-of-way (ROW). The field survey focused primarily on determining the potential habitat for federal- and state-listed plant and wildlife species. Performed a focused plant survey and desert tortoise presence/absence surveys along several sections of the ROW.

Regulatory Agency Coordination, Background Data Review, Biological Reconnaissance, Protocol surveys for Mohave Ground Squirrel, Burrowing Owl, and Desert Tortoise, Rosamond, Kern County – Capital Pacific Homes Inc. Assisted Capital Pacific Homes with coordination and negotiations with regulatory and planning agencies with jurisdiction over the proposed residential development. Assisted with protocol surveys for the Mohave ground squirrel, burrowing owl, and the desert tortoise on this Mojave Desert Site. The project required review of previous biological studies of the site and the region and review of information available from the regulatory agencies files. The previous studies were updated with the results of the protocol sampling program.

Environmental Compliance Services, Pacific Street Bridge, Oceanside, San Diego County – City of Oceanside, sub to Harris & Associates. Construction activities involved the installation of a bridge over the San Luis Rey River, replacing an earthen crossing near the mouth of the San Luis Rey River adjacent to the Oceanside Harbor. Suitable habitat for sensitive species including California gnatcatcher, light-footed clapper rail, and nesting bird existed adjacent to the project footprint; steelhead trout were identified upstream of the project site. Chambers Group provided construction and noise monitoring to ensure permit compliance and prevent negative impacts to the environment. An environmentally sensitive area (ESA) was outlined with silt fencing directly adjacent to the project area, and fish seining as well as periodic nesting bird surveys were conducted within this ESA. Chambers Group implemented an off-site mitigation and exotic removal program, prepared a Mitigation Monitoring Implementation Plan, and provided restoration monitoring. Results of services were provided in detailed monitoring reports to the client.

Relevant Experience (Continued)

Desert Tortoise Clearance Surveys, Palmdale Water Reclamation Plant Stage 5 Effluent Management Facilities, Palmdale, Los Angeles County – Los Angeles County Sanitation District. The Palmdale Water Reclamation Plant Stage Five Effluent Management Facilities project involves construction of storage reservoirs. As part of USFWS approval, the Districts have committed to install a fence around the storage reservoirs to keep tortoises out. Clearance surveys will be performed within the area upon completion of the fence to ensure desert tortoises have not been trapped inside the fenced area. This desert tortoise clearance survey within the fenced area will follow the appropriate USFWS protocol.

Rancho Las Flores Natural and Cultural Resources Management Plan, Hesperia, San Bernardino County – Rancho Las Flores, LLC. Conducted reconnaissance surveys, suitability evaluations, and focused surveys for special-status species. A Habitat Suitablility Evaluation (HSE) was conducted for southwestern willow flycatcher, least Bell's vireo, burrowing owl, California red-legged frog, Mohave ground squirrel, long-eared owl, bald eagle, prairie falcon, and two-striped garter snake. The HSE was necessary to identify, in specific detail, the portions of the total project site that should be subject to focused (protocol-level) surveys. The HSE identified what portions of the 641 acres of riparian habitat on the site will be subject to focused surveys for least Bell's vireo and southwestern willow flycatcher. The condition of the existing riparian habitat (i.e. amount of suitable understory vegetation) was evaluated to determine the specific areas where focused surveys are warranted; and identified what portions of the 771 acres of grassland habitat will be subject of focused surveys for burrowing owl. It also identified what portions of the entire site will be subject to focused sensitive plant surveys. The HSE utilized the updated vegetation community map (Chambers Group, 2004) to identify general habitat distribution on the site. The focused survey areas were plotted onto sensitive resource maps to be used in the field. Focused surveys were performed in 2005.

PAUL MORRISSEY

Staff Biologist

Mr. Morrissey has more than 9 years experience participating in and conducting terrestrial and aquatic/marine studies, with a comprehensive background in both collecting data and performing biological monitoring surveys. He is an experienced biologist, field manager and project manager. He has coordinated with state and federal agencies to develop and implement effective mitigation and monitoring plans for listed and sensitive species and to ensure compliance with state and federal laws. He has conducted focused surveys for amphibians, desert tortoise, burrowing owl, small mammals, and protected avian species. He has worked extensively with protected and sensitive fish species such as the Santa Ana sucker, Santa Ana speckled dace, arroyo chub, and rainbow trout. He has also conducted stream and sediment sampling for macro-invertebrates, radio telemetry tracking, electro-fishing surveys, and environmental compliance monitoring. Working on complex linear projects such as the PG&E and SDG&E power transmission line projects has made him familiar with the flora and wildlife species within Riverside, San Diego, and Imperial Counties. He has conducted wetlands delineations pursuant to Section 404 of the CWA and riparian delineations pursuant to Section 1601/1603 of the CDFG Code. He has also prepared jurisdictional delineation reports that were used in the preparation of permit applications for the USACE, CDFG, and RWQCB.

Key Strengths

- 9 Years of Experience in Southern California
- Biological resource analysis and management
- Jurisdictional Delineations
- Wetlands Delineations
- Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), Riparian/Riverine
- Habitat restoration enhancement programs
- Construction mitigation monitoring
- Extensive working knowledge of regulations/guidelines:
- Endangered Species Act
- Clean Water Act
- U.S. Fish and Wildlife Service
- California Dept. of Fish and Game
- U.S. Army Corps of Engineers
- Section 1602/401/404 permitting

Relevant Experience

Chevron Solar Project, Lucerne Valley, San Bernardino, California. Field Manager. Chevron proposes to develop a 516-acre solar photovoltaic power project in the Lucerne Valley. The plant will consist of crystalline silicon PV modules mounted upon single-axis trackers. Conducted Phase II: Burrow Survey for the burrowing owl, a California Species of Concern (CSC) and BLM sensitive species, according to the Burrowing Owl Survey Protocol and Mitigation Guidelines prepared by the California Burrowing Owl Consortium. Conducted Presence/Absence and Zone of Influence Surveys for the desert tortoise in accordance with protocols set forth by the U.S. Fish and Wildlife Service (USFWS 1992). Seven tortoises, five carcasses, and many burrows and tortoise sign such as tracks and scat were identified during the surveys. Conducted avian point count surveys, and assisted with Mohave ground squirrel habitat assessment. Identified and delineated areas of the project site that fell under the regulatory jurisdiction of the USACE pursuant to Section 404 of the Federal Clean Water Act, CDFG jurisdiction pursuant to Section 1602. A Jurisdictional Delineation Report for the project site was completed after the field surveys describing the limits of jurisdiction pursuant to USACE, CDFG, and SWRCB (401). Permit applications for State Water Resources Control Board (SWRCB - 401), USACE (404) and CDFG (1600) will be submitted for project approval.

Environmental Assessment/Initial Study/Mitigated Negative Declaration, Fiber Optic Cable Installation, Victorville, CA to Las Vegas, NV, San Bernardino and Clark County – AT&T, sub to Forkert Engineering & Surveying, Inc. Field Manager. The project involves permitting applications, conducting biological surveys, vegetation mapping and jurisdictional delineations from the City of Victorville to Las Vegas. Conducted general biological reconnaissance surveys to map the vegetation communities, to document the existing biological resources and to assess the habitat for its potential to support sensitive plant and wildlife

Relevant Experience (Continued)

Education

M.S., Biology, California State University, Dominguez Hills; 2005

B.S., Biology California State University, Dominguez Hills; 2001

Registrations, Certifications, and Affiliations

U.S. Fish & Wildlife Service Permit, #TE182550-0

California Dept. of Fish and Game Scientific Collector's Permit, #SC-008151

U.S. Army Corps of Engineers, Wetland Training Institute, Wetland Delineator Certification, 2007

Desert Tortoise Surveying Techniques Workshop, Desert Tortoise Council, 2007; qualified desert tortoise biologist

CDFG authorized to take, possess, and transport flat-tailed horned lizards, 2007

2007 Marvin M. Black Excellence in Partnering Award for the San Gabriel River Project

Southwestern Willow Flycatcher Workshop, Southern Sierra Research Station; 2006

Basic Tracking, Earth Skills, 2006

Electrofishing and Fish Handling Techniques, 2008

species. Identified and delineated areas of the project site that fell under the regulatory jurisdiction of the USACE pursuant to Section 404 of the Federal Clean Water Act, CDFG jurisdiction pursuant to Section 1602. A Jurisdictional Delineation Report for the project site was completed after the field surveys describing the limits of jurisdiction pursuant to USACE, CDFG, and SWRCB (401). Permit applications for State Water Resources Control Board (SWRCB - 401), USACE (404) and CDFG (1600) were submitted for project approval. Conducted presence/absence surveys for the federal- and state-listed threatened desert tortoise (*Gopherus agassizii*) in accordance with protocol set-forth by the U.S. Fish and Wildlife Service (USFWS, 1992). Sign of desert tortoises including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks were recorded.

AT&T Fiber Optic Cable – Las Vegas to Victorville Project, Multiple County – AT&T, sub to Forkert Engineering & Surveying, Inc. Conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources; and assess the habitat's potential to support sensitive plant and wildlife species. Coordinated with BLM to prepared and compose a Noxious Weed Management Plan and a Habitat Restoration Plan. Provided construction monitoring in accordance with project permits for the protection of the desert tortoise. Prepared post-construction desert tortoise monitoring and environmental compliance reports. Provided environmental awareness training for all individuals involved with the project. Conducted jurisdictional delineations fro California Department of Fish and Game along the linear fiber optic line for AT&T. Presence/absence desert tortoise surveys were conducted in California from Stoddard Wells Rd. in Victorville to Slash X Ranch, from Halloran Summti Rd. to Cima Rd. in Baker, and From Nipton Rd, to State Line (Primm, Nevada). Surveyed the project area and the 100 ft. and 300 ft. ZOI transect lines. Tortoise burrows, scat, and a scute were observed in various places along the route. Surveys followed protocol set out by USFWS. Detailed notes and GPS points were recorded when any desert tortoise sign was observed or detected. Conducted construction monitoring from Los Vegas, Nevada to Primm, Nevada. Conducted nesting bird surveys, and assisted with clearance surveys for the desert tortoise. Monitoring included trenching, pipe installation, backfilling, restoration, compaction, vault installation, proofing, cable pulling, splicing, and post installation/replacement. Eighteen tortoises were found along the project site in Nevada and only three had to be handled, in order to be moved away from the approaching construction equipment.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Staff Biologist. The project involves conducting biological surveys, vegetation mapping and wetland delineations along 100-mile-long corridor. Services include a reconnaissance surveys, focused sensitive species surveys (Yuma clapper rail surveys, California black rail surveys, least Bell's vireo, southwestern willow flycatcher, Coachella Valley fringe-toed lizard surveys, desert tortoise presence/ absent surveys, desert pupfish, Peirson's milk vetch surveys, and Algodones Dunes sunflower surveys), and vegetation communities surveys and mapping within the 200-foot right-of-way. The field survey focuses primarily on determining the potential habitat for federal- and state-listed plant and wildlife species. Conducted burrowing owl surveys, general reconnaissance surveys, pre-construction sweeps, and personnel environmental awareness trainings for all construction personnel.

Relevant Experience (Continued)

Regulatory Agency Coordination, Background Data Review, Biological Reconnaissance, Protocol surveys for Mohave Ground Squirrel, Burrowing Owl, and Desert Tortoise, Rosamond, Kern County – Capital Pacific Homes Inc. Chambers Group assisted Capital Pacific Homes with coordination and negotiations with regulatory and planning agencies with jurisdiction over the proposed residential development. Chambers Group conducted protocol surveys for the Mohave ground squirrel, burrowing owl, and the desert tortoise on this Mojave Desert Site. The project required review of previous biological studies of the site and the region and review of information available from the regulatory agencies files. The previous studies were updated with the results of the protocol sampling program.

Barstow Desert Tortoise Surveys, Cellular Tower Project, Barstow, San Bernardino County – Terracon. Conducted a presence/absence survey on the site for the federal- and state-listed threatened desert tortoise (Gopherus agassizii) in accordance with protocol set-forth by the U.S. Fish and Wildlife Service (USFWS, 1992). The survey was conducted on foot over all areas of suitable habitat utilizing 30-foot belt transects to provide 100 percent coverage. A Zone of Influence (ZOI) survey was conducted in the areas directly adjacent to and surrounding the project site where suitable desert tortoise habitat existed and in which tortoises may directly or indirectly be affected by project operations. The ZOI survey was conducted within a buffer of 100, 300, 600, 1,200, and 2,400 feet parallel to the edge of the project boundaries in accordance with USFWS protocol. Sign of desert tortoises including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks were recorded. After completing the field surveys, findings were summarized in a letter report.

BURROWING OWL SURVEYS

Matthews Homes Development Project, San Bernardino County. Project Manager for the 88-acre development project. Project required a CDFG 2081 permit for the take of Mohave ground squirrel and burrowing owl. Tasks include scheduling surveys, supervising staff, ensuring complete data collection, providing quality and control report preparation, interacting effectively with agency personnel, maintaining client communication, maintaining budget parameters, and meeting project deadlines. Conducted Mohave ground squirrel habitat assessment, focused burrowing owl surveys, Zone of Influence surveys for the state- and federal-listed threatened desert tortoise, construction monitoring, 2081 permit compliance, and mitigation reports. Burrowing owl were identified during the surveys, authored a Passive Relocation Plan for CDFG, and assisted Jeff Kidd with the passive relocation. Coordinated with Tonya Moore (CDFG) regarding the mitigation for this project site.

Medical Real Estate Development, Riverside County. Project Manager. Conducted Phase III burrowing owl surveys for the Medical Real Estate Development located in Sun City (APNs: 333-050-012-9, 333-050-009-7, 333-050-010-7, & 333-050-011-8), Riverside County, California. The 10-acre site was surveyed for burrowing owl and nesting birds, and consisted of 4 separate site visits one-hour before sunrise to two-hours after sunrise for four non-consecutive days. No owls were identified using the burrows. A memo report was sent to local Agencies and DFG.

Biological Reconnaissance Survey, 80-Acre Residential Development, Apple Valley, San Bernardino County – KJAJ Development. Task Manager. Conducted a biological reconnaissance survey of 80 acres. Conducted habitat assessment for Mohave ground squirrel and burrowing owl. Identified a pair of burrowing owls onsite. Studies were conducted in order to comply with CEQA and with local regulations.

Biological and Cultural Resources Inventory, 20-Acre Development Project, Hesperia, San Bernardino County – D.A. Development. Task Manager for housing development project in Hesperia. Conducted a biological reconnaissance survey of 20 acres. Conducted habitat assessment for Mohave ground squirrel and burrowing owl. These studies were conducted in order to comply with CEQA and with local regulations.

Relevant Experience (Continued)

MSHCP Habitat Assessment, 3.07-Acre Site, Sun City, Riverside County – Hollander Management, LLC. Conducted a Multiple Species Habitat Conservation Plan (MSHCP) habitat assessment for burrowing owl and sensitive plants on the 3.07 acre site according to Riverside County guidelines. A report will be prepared based on these findings and submitted to the County.

Cantu-Gallaeno at I-15 Exchange Project, Corona, Riverside County – Riverside County Transportation Department, sub to Harris & Associates. Performed presence/absence surveys for burrowing owl in Delhi-Sand Loving Fly known population. No burrowing owl were identified.

REBECCA ALVIDREZ

Associate Biologist

Ms. Alvidrez has five years of experience working on research for federal and state-listed plant species of California's central coast including Monterey gilia and Monterey spineflower. She has experience with live-trapping, banding, blood sampling of common passerines including species such as yellow-headed blackbirds. She has experience in conducting biological reconnaissance-level vegetation surveys, plant transects, and restoration monitoring. She has co-authored environmental and biological sections for a variety of reports, including official habitat restoration plans.

Key Strengths

Vegetation surveys
Restoration monitoring
Habitat Restoration plans
Focus wildlife/vegetation surveys
Construction Mitigation Monitoring
Archeological surveys
Archeological Phase II testing

Relevant Rare Plant Species Experience

Crafton Hills Reservoir Expansion and Pipeline Project, Crafton, San Bernardino County – Department of Water Resources, sub to Environmental Science Associates. Associate Botanist participating in conducting a focused plant survey for the entire project area for the presence/absence of Santa Ana River woollystar, slender-horned spineflower, Nevin's barberry, Parish's checkerbloom, Parry's spineflower, Plummer's mariposa lily, and other sensitive plant species. Prepared a Biotechnical Report following all surveys that was incorporated into the EIR for this project.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Associate biologist. Conducted biological reconnaissance surveys focusing primarily on vegetation communities surveys and mapping along a 100-mile corridor within the 200-foot right-of-way. The field survey focused primarily on determining the potential habitat for federal- and state-listed plant and wildlife species. Performed focus surveys determine the presence or absence onsite of 2 federal- and state-listed sensitive species for Peirson's milk vetch (*Astragalus magdalenae* var. *peirsonii*) and Algodones Dunes sunflower (*Helianthus niveus* ssp. *tephrodes*). Surveyed from mile post 698 to 715 by walking transects on both sides of the railroad tracks and recording the plant species found. Reconnaissance surveys involved surveys for sensitive species (Yuma clapper rail surveys, California black rail surveys, least Bell's vireo, southwestern willow flycatcher, Coachella Valley fringe-toed lizard surveys, desert pupfish). Conducted a focused survey for the desert tortoise covering 100% of the project site for 43 miles from mile post 679 to mile post 722. Assisted with the determination of the jurisdictional limits of the various governmental agencies that regulate wetlands and waterways. The effort involved the evaluation and documentation of over 250 drainage features, including nearly 100 separate wetland delineations.

Aerial Mapping and Survey of Endangered Plant Population – Santa Barbara County. Associate Botanist, assisted in conducting a comprehensive field survey mapping the distribution of a protected plant species population throughout the 2,000 acre property. Chambers Group was retained to advise this client in the resolution of land use challenges relevant to managing the protection of a federally-listed endangered and state-listed rare plant species with oil and gas exploration on private land. The sensitive plant species was encroaching into operational areas and impeding normal facility operations and maintenance, generating a unique challenge to the property owner. Following the survey, Chambers Group facilitated discussions with the U.S. Fish and Wildlife Service and the California Department of Fish and Game and obtained authorization for the client to conduct limited maintenance activities in specified facility locations to control encroachment of the sensitive plant species. In addition, Chambers Group evaluated long-term control measures to restrict the encroachment of the sensitive plant species into operational areas. A

Relevant Experience (Continued)

summary report of recommended control measures was subsequently provided. This project is ongoing. We have been asked to maintain confidentiatlity on behalf of the client with regards to this project.

Riparian Restoration, Enhancement Plan and Monitoring, Santa Margarita River Flood Plain, Marine Corps Air Station, Camp Pendleton, Oceanside, San Diego County – U.S. Navy, MCAS Camp Pendleton, sub to Insight Environmental, Engineering & Construction, Inc. Associate Botanist responsible for the monitoring restoration activities occurring on 55 acres of fragmented river floodplain adjacent to the Santa Margarita River and monitoring the ground water. Additional tasks included the sampling of the stacked cube method within the existing least Bell's vireo habitat and riparian vegetation adjacent to the helicopter landing area on Camp Pendleton as well as the restored areas. Success criteria will be primarily a function of how suitable the habitat is for vireo. Chambers Group designed and oversaw installation of nearly 50 acres of riparian woodland at the Marine Corps Air Station, Camp Pendleton. The comprehensive design included resource protection, weeding, plant and seed lists, planting methods and care after planting, including irrigation. The vegetation grew with exceptional speed; many plants that had been in liner containers in early 2006 were nearly indistinguishable from mature native-grown plants of the same species by early 2007. Chambers Group provided monitoring, instructions and advice to the landscape contractor, and assistance with topics including weed control throughout the growing period. Chambers Group also carried out technical functions apart from restoration, including monitoring of ground water, tree height related to aircraft safety, and various wildlife monitoring functions.

Environmental Compliance Services, Pacific Street Bridge, Oceanside, San Diego County – City of Oceanside, sub to Harris & Associates. Associate Botanist co-authored the Mitigation Monitoring Plan of an off-site mitigation and exotic removal program. Chambers Group implemented the off-site mitigation and exotic removal program, and provided restoration monitoring. Results of services were provided in detailed monitoring reports to the client. Construction activities involved the installation of a bridge over the San Luis Rey River, replacing an earthen crossing near the mouth of the San Luis Rey River adjacent to the Oceanside Harbor.

Education
B.S., Ecology and Evolution, University of California, Santa Cruz; 2003

Specialized Training
Plant Identification for Coastal Southern California (Wetland Training Institute, Inc.) – San Diego, California 2007
The Grass Family: Identification and Ecology, Rancho Santa Ana Botanic Garden, 2007
Surveying, Monitoring, and Handling Techniques Workshop, Desert Tortoise Council, 2008
Elkhorn Slough Coastal Training Program Workshop for California Red-legged frog
Elkhorn Slough Coastal Training Program Workshop for California Tiger Salamander
Elkhorn Slough Coastal Training Program Workshop for Western Pond Turtle

Registration and Certification
Scientific Collector's Permit # 009931, California Department of Fish and Game
Permit to take, possess, and transport Flat-tailed Horned Lizards as a biological monitor and during surveys for public agencies, California Department of Fish and Game

Memberships
Member of Member or California Native Grasslands Association (CNGA)
Member of California Society for Ecological Restoration (SERCAL)
California Invasive Plant Council (Cal IPC)

Biological Resources Surveys, Revegetation and Mitigation Monitoring for the Marblehead Coastal Project, San Clemente, Orange County – SunCal Properties. Associate Botanist, participated in conducting preliminary soil experiments for soil productivity from previously collected soil to determine the soil ammendments needed prior to planting. Chambers Group is providing environmental consulting services, which include supplying the technical assistance needed to acquire a Coastal Development Permit and ensure compliance with all other applicable permits, as well as conduct focused gnatcatcher surveys, construction monitoring, ecological restoration and performance monitoring for 5 years. Chambers Group will ensure compliance with all conditions of the Habitat Management Plan (HMP) during initial vegetation clearing/grubbing, erosion control and project construction phases. Chambers Group prepared the upland portion of the HMP to protect, restore, and manage native grasslands, coastal bluff scrub, the Blochman's Dudleya Reserve, and approximately 70 acres of coastal sage scrub located within the Marblehead property. The mitigation plan describes site preparation methods, plant and seed lists, plant installation techniques, and maintenance procedures for restoration of the upland habitats to be installed as required in the

Relevant Experience (Continued)

Biological Opinion. Chambers Group developed performance standards and an onsite production nursery to accommodate several thousand plants and store over four tons of seed. Restoration efforts include enhancement of native grasslands and coastal bluff scrub. The HMP was designed to maximize the habitat value for coastal California gnatcatcher and other species dependent on sage scrub as well as to enhance the functional value of the preserved/restored wetlands within the canyons by improving connectivity and allowing for wildlife movement between each area.

Conceptual Mitigation and Monitoring Plan, 256.9-acre Proposed Development Site, Yorba Linda, Orange County – Pulte Homes. Designed mitigation programs, both on-site and off-site. Located suitable mitigation areas and made necessary arrangements with state park. Extensive biological resources surveys were conducted to document the biological conditions on several large restoration sites on behalf of a private developer. Tract #s 15566, 16320 & 16321. The purpose of the surveys was to identify the species of plants and wildlife present and to map the vegetation communities and wildlife habitat on the site. The habitats were assessed for the potential to support listed and/or sensitive species of plants and wildlife.

Tree Assessment Survey, Biological Services for South Region Landfills, Santa Ana, Orange County – County of Orange Integrated Waste Management Department. Measured the diameter at breast height, tree height, and tree canopy of all California Sycamore (*Platanus racemosa*) trees in a specific canyon. Took photos and GPS points of each tree as well. All trees were in good health and most were very large. Conducting preliminary soil experiments for soil productivity using previously collected soil to determine the possible soil ammendment needed for planting. Provided biological consulting services to IWMD for South County landfills. The project involved surveys and monitoring of endangered species, mitigation monitoring, brown-headed cowbird trapping, state and federal regulatory planning, CEQA documents, as-needed biological services, contractor coordination, biological services at closed landfills project management, and a restoration training course.

Biological Surveys, San Juan Capistrano Lower Landslide, San Juan Capistrano, Orange County – City of San Juan Capistrano Public Works. Associate Biologist. Assisted with mitigation monitoring and reporting. The project involved grading and removal of debris from a landslide area, and stabilizing an existing water pipeline. Chambers Group conducted a biological reconnaissance survey of the site, vegetation mapping, construction monitoring, and restoration of approximately three acres of coastal sage and one acre of disturbed coastal sage scrub. Prepared monitoring reports which documented construction and restoration activities as well as species observed onsite.

Biological Surveys and Monitoring, Big Dalton Dam Sediment Removal, Glendora, Los Angeles County – Los Angeles County Department of Public Works, Water Resources Division. Participated in field surveys including vegetation mapping, focused plant surveys, amphibian, reptile, fish, avian, and mammal surveys, stream assessments and macroinvertebrate collections from above the reservoir to 2 miles downstream of the Big Dalton Dam. Data and analysis of the project is provided in the Pre- and Post-Dewatering Biological Technical Report for the Big Dalton Dam Reservoir Cleanout Project.

San Gabriel River Sediment Management Plan, Biological Surveys & Monitoring, Azusa, Los Angeles County – Los Angeles County Department of Public Works. Associate Botantist participated in conducting vegetation mapping and performance monitoring. Chambers Group performed a determination of jurisdictional wetlands, the study area includes from Morris Dam downstream to Foothill Boulevard and Brown's Gulch. A functional analysis methodology was formulated to assess and compare the biological resources of the two sites. Data related to the biological, physical, and biogeochemical functions at each site were collected on transects in upland, riparian, and aquatic habitats to complete the functional analysis. A biological resources assessment report was written which included the methodology used for field survey

Relevant Experience (Continued)

and functional analysis techniques, a discussion of existing conditions at both sites, and the functional analysis comparing the sites.

REVELENT WILDLIFE EXPERIENCE

AT&T – Surveys for Environmental Assessment/Initial Study/Mitigated Negative Declaration, Fiber Optic Cable Installation, Victorville, CA to Las Vegas, NV, San Bernardino and Clark County – AT&T, sub to Forkert Engineering & Surveying, Inc. The project involves permitting applications (Section 7, Section 404, 401, 1600 and WDR), conducting general and focused biological surveys, construction monitoring, GIS mapping and jurisdictional delineations along the linear project area. Conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources and; assess the habitat's potential to support sensitive plant and wildlife species. Conducted presence/absence surveys for the federal- and state-listed threatened desert tortoise (Gopherus agassizii) in accordance with protocol set-forth by the U.S. Fish and Wildlife Service (USFWS, 1992). Sign of desert tortoises including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks were recorded. Phase II involves construction monitoring for cable installation activities. Phase I involved conducting general biological reconnaissance surveys to map the vegetation communities, to document the existing biological resources and to assess the habitat for its potential to support sensitive plant and wildlife species. Performed biological monitoring services over a 4 month period, including pre-construction sweeps, construction monitoring, and report submittals.

AT&T – Surveys for Environmental Assessment/Initial Study/Mitigated Negative Declaration, Fiber Optic Cable Installation, Victorville, CA to Las Vegas, NV, San Bernardino and Clark County – AT&T, sub to Forkert Engineering & Surveying, Inc. The project involves permitting applications (Section 7, Section 404, 401, 1600 and WDR), conducting general and focused biological surveys, construction monitoring, GIS mapping and jurisdictional delineations along the linear project area. Conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources and; assess the habitat's potential to support sensitive plant and wildlife species. Conducted presence/absence surveys for the federal- and state-listed threatened desert tortoise (Gopherus agassizii) in accordance with protocol set-forth by the U.S. Fish and Wildlife Service (USFWS, 1992). Sign of desert tortoises including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks were recorded. Phase II involves construction monitoring for cable installation activities. Phase I involved conducting general biological reconnaissance surveys to map the vegetation communities, to document the existing biological resources and to assess the habitat for its potential to support sensitive plant and wildlife species. Performed biological monitoring services over a 4 month period, including pre-construction sweeps, construction monitoring, and report submittals.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Assistant biologist. Conducted biological reconnaissance surveys focusing primarily on vegetation communities surveys and mapping along a 100-mile corridor within the 200-foot right-of-way. The field survey focused primarily on determining the potential habitat for federal- and state-listed plant and wildlife species. Performed focus surveys determine the presence or absence onsite of 2 federal- and state-listed sensitive species for Peirson's milk vetch (*Astragalus magdalenae var. peirsonii*) and Algodones Dunes sunflower (*Helianthus nivenus ssp. tephrodes*). Surveyed from mile post 698 to 715 by walking transects on both sides of the railroad tracks and recording the plant species found. Reconnaissance surveys involved surveys for sensitive species (Yuma clapper rail surveys, California black rail surveys, least Bell's vireo,

Relevant Experience (Continued)

southwestern willow flycatcher, Coachella Valley fringe-toed lizard surveys, desert pupfish). Conducted a focused survey for the desert tortoise covering 100% of the project site for 43 miles from mile post 679 to mile post 722. Surveys were conducted following Fish and Wildlife Service protocols of 1992. Old desert tortoise burrows and possible old scat were detected on site. GPS locations, photos, and detailed notes were taken upon detection of all sign. No desert tortoise or desert tortoise carcasses were detected on site. Assisted with the determination of the jurisdictional limits of the various governmental agencies that regulate wetlands and waterways. The effort involved the evaluation and documentation of over 250 drainage features, including nearly 100 separate wetland delineations. Conducted pre-construction surveys for desert tortoise and construction monitoring from Sidewinder Road to HWY 78 in Glamis.

Rancho Las Flores Natural and Cultural Resources Management Plan, Hesperia, San Bernardino County – Rancho Las Flores, LLC. Chambers Group biologists conducted reconnaissance surveys, suitability evaluations, and focused surveys for special-status species. A Habitat Suitablility Evaluation (HSE) was conducted for southwestern willow flycatcher, least Bell's vireo, burrowing owl, California red-legged frog, Mohave ground squirrel, long-eared owl, bald eagle, prairie falcon, and two-striped garter snake. The HSE was necessary to identify, in specific detail, the portions of the total project site that should be subject to focused (protocol-level) surveys. Conducted focused surveys for plants and firedamage on site during 2008.

Regulatory Agency Coordination, Background Data Review, Biological Reconnaissance, Protocol surveys for Mohave Ground Squirrel, Burrowing Owl, and Desert Tortoise, Rosamond, Kern County – Capital Pacific Homes Inc. Chambers Group assisted Capital Pacific Homes with coordination and negotiations with regulatory and planning agencies with jurisdiction over the proposed residential development. Conducted protocol surveys for the burrowing owl and the desert tortoise on this Mojave Desert Site. The project required review of previous biological studies of the site and the region and review of information available from the regulatory agencies files. The previous studies were updated with the results of the protocol sampling program.

Nesting Bird Survey, City of Glendale, Los Angeles County – LADPW. Conducting nesting bird surveys in the Cooks Canyon debris basin crib dam M1-A Dewatering system for two weeks, three days each week for a total of six surveys.

Education
B.S., Ecology and Evolution, University of California, Santa Cruz; 2003

Specialized Training
Plant Identification for Coastal Southern California (Wetland Training Institute, Inc.) – San Diego, California 2007
The Grass Family: Identification and Ecology, Rancho Santa Ana Botanic Garden, 2007
Surveying, Monitoring, and Handling Techniques Workshop, Desert Tortoise Council, 2008
Elkhorn Slough Coastal Training Program Workshop for California Red-legged frog
Elkhorn Slough Coastal Training Program Workshop for California Tiger Salamander
Elkhorn Slough Coastal Training Program Workshop for Western Pond Turtle

Registration and Certification
Scientific Collector's Permit # 009931, California Department of Fish and Game
Permit to take, possess, and transport Flat-tailed Horned Lizards as a biological monitor and during surveys for public agencies, California Department of Fish and Game

Memberships
Member of Member or California Native Grasslands Association (CNGA)
Member of California Society for Ecological Restoration (SERCAL)
California Invasive Plant Council (Cal IPC)

Environmental Compliance Services, Pacific Street Bridge, Oceanside, San Diego County – City of Oceanside, sub to Harris & Associates. Construction activities involved the installation of a bridge over the San Luis Rey River, replacing an earthen crossing near the mouth of the San Luis Rey River adjacent to the Oceanside Harbor. Suitable habitat for sensitive species including California gnatcatcher, light-footed clapper rail, and nesting bird existed adjacent to the project footprint; steelhead trout were identified upstream of the project site. Chambers Group provided construction and noise monitoring to ensure permit compliance and prevent negative impacts to the environment. An environmentally sensitive area (ESA) was outlined with silt fencing directly adjacent to the project area, and fish seining as well as periodic nesting bird surveys were conducted within this ESA. Chambers Group implemented an off-site mitigation and exotic removal program,

Relevant Experience (Continued)

prepared a Mitigation Monitoring Implementation Plan, and provided restoration monitoring. Results of services were provided in detailed monitoring reports to the client.

Desert Tortoise Clearance Surveys, Palmdale Water Reclamation Plant Stage 5 Effluent Management Facilities, Palmdale, Los Angeles County – Los Angeles County Sanitation District. The Palmdale Water Reclamation Plant Stage Five Effluent Management Facilities project involves construction of storage reservoirs. As part of USFWS approval, the Districts have committed to install a fence around the storage reservoirs to keep tortoises out. Clearance surveys will be performed within the area upon completion of the fence to ensure desert tortoises have not been trapped inside the fenced area. This desert tortoise clearance survey within the fenced area will follow the appropriate USFWS protocol.

Water Reclamation Project in Palmdale, Los Angeles, California - Los Angeles Sanitation District. Monitored all construction activities which included; the installation of a pipeline, vaults, pump station, and reservoirs. No tortoises were detected/observed on the project site; however, old desert tortoise burrows without recent sign were observed.

SARAIAH SKIDMORE

Associate Biologist/Botanist

Ms. Skidmore has four years of experience in identification of vertebrate species as well as major plant communities and vegetation in southern California. Ms. Skidmore has experience conducting biological reconnaissance-level surveys, habitat assessments, mapping vegetation, plant transects, construction monitoring, and jurisdictional delineations. Following current protocols, she has conducted focused surveys for federal- and state-listed species and California special concern species including desert tortoise, burrowing owl, snowy plover, least Bell's vireo, coastal California gnatcatcher, Plummer's mariposa lily, and thread-leaved brodiaea. Ms. Skidmore has authored and co-authored environmental and biological sections of reports. In addition, Ms. Skidmore has experience with GIS analysis.

Key Strengths

- Focus Surveys for Sensitive Species
- Biological Resources Surveys
- Habitat Assessments
- Construction Mitigation Monitoring

Relevant Experience

CEQA Services, IS/MND, Smith Correctional Facility Expansion, Banning, Riverside County – County of Riverside Department of Facilities Management, Real Estate Division, sub to ICF International. Conducted a habitat assessment on the project site following a literature review (including searching the latest editions of the California Natural Diversity Data Base and California Native Plant Society Electronic Inventory). A cultural resources records search was conducted with the South Central Coastal Archaeological Information Center located at the University of California, Riverside to determine the extent and results of previous cultural resources studies that have been conducted in and near the project area. Co-authored the results of the survey. The area of the project site was 139,000 square feet. The county of Riverside required CEQA compliance documents for this project. The project required an Initial Study (IS) and Mitigated Negative Declaration (MND). Chambers reviewed all available project-related data presented to us by the County and ICF to determine if there was sufficient data for use to prepare the IS. The biological investigation of the project areas consisted of a literature review (including searching the latest editions of the California Natural Diversity Data Base and California Native Plant Society Electronic Inventory) and a reconnaissance-level site visit. A cultural resources records search was preformed with the South Central Coastal Archaeological Information Center located at the University of California, Riverside to determine the extent and results of previous cultural resources studies that have been conducted in and near the project area. A site visit conducted by a qualified archaeologist. An air and noise study was completed. A response to all written and oral comments received on the Draft IS/MND was prepared according to City Staff direction.

Rancho Las Flores Natural and Cultural Resources Management Plan, Hesperia, San Bernardino County – Rancho Las Flores, LLC. Chambers Group biologists conducted reconnaissance surveys, suitability evaluations, and focused surveys for special-status species. A Habitat Suitablility Evaluation (HSE) was conducted for southwestern willow flycatcher, least Bell's vireo, burrowing owl, California red-legged frog, Mohave ground squirrel, long-eared owl, bald eagle, prairie falcon, and two-striped garter snake. The HSE was necessary to identify, in specific detail, the portions of the total project site that should be subject to focused (protocol-level) surveys. The HSE identified what portions of the 641 acres of riparian habitat on the site will be subject to focused

Relevant Experience (Continued)

surveys for least Bell's vireo and southwestern willow flycatcher. The condition of the existing riparian habitat (i.e. amount of suitable understory vegetation) was evaluated to determine the specific areas where focused surveys are warranted; and identified what portions of the 771 acres of grassland habitat will be subject of focused surveys for burrowing owl. It also identified what portions of the entire site will be subject to focused sensitive plant surveys. The HSE utilized the updated vegetation community map (Chambers Group, 2004) to identify general habitat distribution on the site. The focused survey areas were plotted onto sensitive resource maps to be used in the field. Focused surveys were performed in 2005.

MSHCP Habitat Assessment, 4.04-Acre Site, Murietta, Riverside County – Angel Rodriguez. Chambers Group conducted a Multiple Species Habitat Conservation Plan (MSHCP) habitat assessment for burrowing owl 4.04-acre site according to Riverside County guidelines. A report was prepared based on these findings and submitted to the County.

Biological Resources Surveys, Lancaster, Los Angeles County – Nancy Chou. Chambers Group conducted a literature review to determine if there are any existing records of listed and/or sensitive plant and wildlife species occurring on or in the vicinity of the site. This task will included a review of the California Natural Diversity Database (CNDDB) and the California Native Plant Society's Electronic Inventory (CNPSEI) for relevant information. In addition, biological information included in reports previously prepared for this project or adjacent projects (if available) will be reviewed. After conducting the literature search, biologists familiar with the resources known or expected to occur in the project's vicinity conducted a reconnaissance-level survey of the biological resources on the site. All plant communities on the project site were be surveyed, mapped, and qualitatively described and all habitats on the site were characterized. Chambers Group biologists documented the presence of common and sensitive biological resources on the project site. Chambers Group biologists also conducted a preliminary assessment of the Project site to identify potential U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act and California Department of Fish and Game (CDFG) jurisdiction pursuant to Section 1602 of the State of California Fish and Game Code. Suspected jurisdictional areas will be field checked for the presence of definable channels and/or wetland vegetation. Suspected USACE/CDFG jurisdictional areas were field checked for the presence of riparian vegetation, definable channels, and Ordinary High Water Marks (OHWMs). The proposed project site is potentially within the range of desert tortoise (Gopherus agassizii), burrowing owl (Athene cunicularia), and Mojave ground squirrel (Spermophilus mohavensis). All data was presented in a biological technical report.

Nesting Bird and Burrowing Owl Preconstruction Survey, Lancaster, Los Angeles County – Matthews Homes. Conducted a Nesting Bird Survey for two 10-acre sites. The objective of the surveys was to identify any nesting birds in the site at a maximum of 30 days prior to ground disturbing activities throughout the project site utilizing approximately 30- or 100-foot belt transects, depending on the density of vegetation, in order to maintain 100 percent coverage, which is

Education

B.S. Biology, California State University, Fullerton; 2006

Emphasis in Biodiversity, Ecology, and Conservation

Memberships

Desert Tortoise Council

Defenders of Wildlife

The Society for Conservation Biology

Specialized Training, Certifications

Surveying, Monitoring, and Handling Techniques Workshop, Desert Tortoise Council, 2006

BLM Flat-tailed Horned Lizard Training, May 2007

Intro to Birding Workshop – Sea and Sage Audubon Society, 2006

Scientific Collector's Permit # 009105, California Department of Fish and Game

Permit to take, possess, and transport Flat-tailed Horned Lizards as a biological monitor and during surveys for public agencies, California Department of Fish and Game

Relevant Experience (Continued)

required by the Department of Fish and Game. Any active and inactive nests on site as well as within the 150 foot buffer were recorded on data sheets.

Regulatory Agency Coordination, Background Data Review, Biological Reconnaissance, Protocol surveys for Mohave Ground Squirrel, Burrowing Owl, and Desert Tortoise, Rosamond, Kern County – Capital Pacific Homes Inc. Conducted a focused survey for the desert tortoise. Transects were walked by foot in order to cover 100% of the project site. Conducted transects for the zone of influence (ZOI) at 100, 300, 600, 1200, and 2400ft. Desert tortoise or desert tortoise sign were not detected on site or in the ZOI.

MSHCP Habitat Assessment, Normandale Holdings, Sun City, Riverside County – Jack Van Norman. Chambers Group, Inc., was retained by Normandale Holdings, Ltd. to conduct a habitat assessment for burrowing owl (Athene cunicularia), Stephen's kangaroo rat (Dipodomys stephensi), and six narrow endemic plant species: Munz's onion (Allium munzii), San Diego ambrosia (Ambrosia pumila), many-stemmed dudleya (Dudleya multicaulis), spreading navarretia (Navarretia fossalis), California Orcutt grass (Orcuttia californica), and Wright's trichocoronis (Trichocoronis wrightii var. wrightii) on September 20, 2005. Chambers Group biologists also assessed the site for vernal pools and potential jurisdictional waters. In addition, botanists conducted focused surveys for San Diego ambrosia and Many-stemmed dudleya on April 16, 2007. An Urban/Wildlands Interface Guidelines (UWIG) analysis was performed to address indirect effects associated with locating development in proximity to a Multiple Species Habitat Conservation Plan (MSHCP) Conservation Area. Sources of edge effects analyzed in the UWIG analysis include runoff from the project site into the Conservation Area, potential for generation of toxics and potential for night lights adversely affecting wildlife with the Conservation Area, potential for noise generation from proposed land use within the project site, potential for invasive plant species from proposed project site landscaping, incorporation of barriers to minimize unauthorized public access, domestic animal predation, illegal trespass or dumping in the Conservation Area, and manufactured slopes from proposed development extending into the Conservation Area. The purpose of the report was to document the results of the habitat assessment, sensitive habitat evaluation, and focused surveys and was written in accordance with MSHCP guidelines (Riverside County, 2007).

Burrowing Owl Survey, Redlands, San Bernardino County – Brentwood Communities. Chambers Group biologists conducted a focused survey for burrowing owl throughout the project site and within a 150-meter buffer around the site, utilizing approximately 30- or 100-foot belt transects. The results of this survey are valid for a maximum of 30 days from the last active day of the focused survey (August 2, 2007) according to the California Department of Fish and Game (CDFG). No burrowing owl and/or burrows or sign were observed on the project site. No owls were observed in the adjacent buffer zone during the focused survey. After completing the field surveys, methodology and findings were summarized and incorporated into a memo report.

Relevant Experience (Continued)

Phase II Burrowing Owl Survey, Riverside, Riverside County – LA-Magnolia Spectrum, LLC. Conducted a focused Phase II Burrowing owl survey on a 16-acre parcel according to The Burrowing Owl Consortium guidelines (1993). Assisted with the preparation of the biological technical report in order to document the results of the survey.

Burrowing Owl Pre-Construction Survey, 66-Acre Granite Homes Site, Redlands, San Bernardino County – Granite Homes. Walked transects according to The Burrowing Owl Consortium guidelines (1993), on appropriate habitat in search for the presence of burrowing owls or any sign of burrowing owls on the 66 acre site prior to grading for the development of homes. No burrowing owls were found and a letter report was written to document the survey.

Matthews Homes Development Properties, City of Victorville, Los Angeles County, California. Conducted presence/absence survey for the desert tortoise *(Gopherus agassizii)* on the project site as well as a zone of influence survey. No desert tortoise or desert tortoise sign was detected on the project site or in the vicinity of the project site.

Matthews Homes Development Properties, City of Victorville, Los Angeles County, California. Conducted a Phase II burrowing owl survey on the project site located on Bear Valley Road just east of Highway 395. A burrowing owl was detected on site and was re-located following the protocol by the California Department of Fish and Game. Conducted construction monitoring for the site in order to prevent "take" of the burrowing owl and/or the Mojave ground squirrel as well as to be sure all other BMPs were taking place.

Tracy Development Project, City of Etiwanda, San Bernardino County, California. Conducted a Phase II burrowing owl survey on 107 acres and within a 150 ft buffer around the project site. Transects varied, because of topography differences, in order to cover 100% of the site. Burrowing owl sign was detected, however, sign was determined to be old and no burrowing owls were detected on site.

Normandale Holdings Project, City of Sun City, Riverside County, California. Conducted a Phase II burrowing owl survey following the burrowing owl survey instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area. No burrowing owls or burrowing owl sign was detected. Because of the proximity of the project site to MSHCP conservation areas, a Urban/Wildlands Interface Analysis was included in the report of the survey results and followed guidelines by the MSHCP.

Capital Pacific Homes Project, City of Rosamond, Kern County, California. Conducted a Phase II/Phase III burrowing owl survey on approximately 88 acres and within the 250ft. buffer. Upon detection of a burrowing owl and an active burrowing owl burrow on the first day, a Phase III survey was continued for the following three days. All behavior, foraging areas, and territorial boundaries were noted. The burrow was found to be occupied by a breeding pair of burrowing owls.

Relevant Experience (Continued)

PSOMAS Street Widening Project, Moreno Valley, Riverside County, California. Conducted a habitat assessment for the burrowing owl. Suitable burrowing owl habitat exists on the project site; therefore, a Focused Burrow Survey and Pre-Construction Burrowing Owl Survey will be required. Conducted a Focused Burrow Survey during the breeding season for the burrowing owl covering 100% of the project site including a 150-meter buffer around the site according to guidelines set by the MSHCP. Wrote the report of findings of the Focused Burrow Survey.

Brentwood Communities in the City of Redlands, San Bernardino County, California. Conducted a pre-construction survey for the Burrowing Owl (*Athene cunicularia*) on the project site (tract 17962) located on the northwest corner of Nevada St. and Orange Ave. No burrowing owl or sign was detected on the site. Wrote a memo report of the findings.

Burrowing Owl Habitat Assessment and Focused Burrow Survey, Lurin Avenue Preschool Development Site, Riverside, Riverside County – KoriLain, LLC. Due to the presence of suitable burrowing owl habitat, i.e. ruderal vegetation, a field survey was conducted during the non-breeding season to determine the presence of burrowing owl within 100 percent of suitable habitat onsite, and within a 150-meter buffer around the project site, utilizing approximately 30 meter parallel pedestrian belt transects in ruderal areas according to protocol approved by the California Department of Fish and Game (CDFG) (Burrowing Owl Consortium 1993) and modifications to said protocol by RCIP (2006). No burrowing owls or burrowing owl sign were observed/detected during the survey.

Santa Ana Sucker Monitoring, San Gabriel River Sediment Management Plan, Biological Surveys & Monitoring, Azusa, Los Angeles County – Los Angeles County Department of Public Works. Helped re-locate thirty Santa Ana sucker fish under permitted biologists. Assisted with the collection and relocation of two species of fish; the Santa Ana Sucker (*Catosomus santaanae*) and the Santa Ana Speckled Dace (*Rhinichthys osculus*) in 2006. Fish were collected using an electro fisher, seine nets, and dip nets. The fish were identified, measured, counted, and released upstream in the river at the completion of the survey. Activities were in support of the 2006 sediment removal activities at the San Gabriel Reservoir. The Santa Ana Sucker fish were caught/discovered in the stream system during fish surveys conducted by Chambers Group biologists. Due to the low quality habitat conditions and the chance of water drying up where the fish were found, it was decided to move the fish upstream to better conditions.. Conducted pre-construction surveys for nesting birds and any wildlife within the stream before the diversion took place. Any frogs, toads, snakes were re-located upstream where they would not be harmed due to construction activities. Conducted construction monitoring during stream diversions and sediment removal in the reservoir.

San Dimas Reservoir Cleanout Project, San Dimas, Los Angeles County – LADPW, Programs Development Division. Helped re-locate thirty Santa Ana sucker fish under permitted biologists, John O'Brian and Paul Morrissey, following approval by agencies. The Santa Ana Sucker fish were

Relevant Experience (Continued)

caught/discovered in the stream system during fish surveys conducted by Chambers Group biologists. Due to the low quality habitat conditions and the chance of water drying up where the fish were found, it was decided to move the fish upstream to better conditions. Conducted pre-construction surveys for nesting birds and any wildlife within the stream before the diversion took place. Any frogs, toads, snakes were re-located upstream where they would not be harmed due to construction activities. Conducted construction monitoring during stream diversions and sediment removal in the reservoir. Conducted construction monitoring during stream diversions and sediment removal in the reservoir. Conducted vegetation mapping, focused plant surveys, amphibian, reptile, fish, avian, and mammal surveys, stream assessments and macroinvertebrate collections onsite and within the project vicinity. During wildlife surveys, a federally threatened species was found onsite. Through careful coordination with CDFG, USFWS, and USFS, Chambers submitted a biological assessment of potential project impacts on the species, and received an informal consultation letter to proceed with the schedule over a span of 48 hours. Conducted pre-construction surveys for nesting birds and any wildlife within the stream before the diversion took place. Any frogs, toads, snakes were re-located upstream where they would not be harmed due to construction activities.

Barstow Desert Tortoise Surveys, Cellular Tower Project, Barstow, San Bernardino County – Terracon. Chambers Group conducted a literature review to determine if there were any existing records of listed and/or sensitive plant and wildlife species occurring on or in the vicinity of the site. Chambers Group conducted a presence/absence survey on the site for the federal- and state-listed threatened desert tortoise (Gopherus agassizii) in accordance with protocol set-forth by the U.S. Fish and Wildlife Service (USFWS, 1992). The survey was conducted on foot over all areas of suitable habitat utilizing 30-foot belt transects to provide 100 percent coverage. A Zone of Influence (ZOI) survey was conducted in the areas directly adjacent to and surrounding the project site where suitable desert tortoise habitat existed and in which tortoises may directly or indirectly be affected by project operations. The ZOI survey will be conducted within a buffer of 100, 300, 600, 1,200, and 2,400 feet parallel to the edge of the project boundaries in accordance with USFWS protocol. Sign of desert tortoises including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks were recorded. After completing the field surveys, findings were summarized in a letter report.

Environmental Assessment/Initial Study/Mitigated Negative Declaration, Fiber Optic Cable Installation, Victorville, CA to Las Vegas, NV, San Bernardino and Clark County – AT&T, sub to Forkert Engineering & Surveying, Inc. The project involves permitting applications (Section 7, Section 404, 401, 1600 and WDR), conducting general and focused biological surveys, construction monitoring, GIS mapping and jurisdictional delineations along the linear project area. Conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources and; assess the habitat's potential to support sensitive plant and wildlife species. Identified and delineated areas of the project site that fell under the regulatory

Relevant Experience (Continued)

jurisdiction of the USACE pursuant to Section 404/401 of the Federal Clean Water Act, CDFG jurisdiction pursuant to Section 1602. Permit applications for State Water Resources Control Board (SWRCB - 401) and WDR, USACE (404) and CDFG (1600) were submitted for project approval. Conducted presence/absence surveys for the federal- and state-listed threatened desert tortoise (Gopherus agassizii) in accordance with protocol set-forth by the U.S. Fish and Wildlife Service (USFWS, 1992). Sign of desert tortoises including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks were recorded. Coordinated with CDFG to identify mitigation measures and monitoring requirements for the desert tortoise and other sensitive species based on the Biological Evaluation in order to streamline the Consistency Determination process.

AT&T Fiber Optic Cable – Las Vegas to Victorville Project, Multiple County – AT&T, sub to Forkert Engineering & Surveying, Inc. Chambers Group conducted general biological reconnaissance surveys to: map the vegetation communities; document the existing biological resources; and assess the habitat's potential to support sensitive plant and wildlife species. Coordinated with BLM to prepared and compose a Noxious Weed Management Plan and a Habitat Restoration Plan. Provided construction monitoring in accordance with project permits for the protection of the desert tortoise. Prepared post-construction desert tortoise monitoring and environmental compliance reports. Provided environmental awareness training for all individuals involved with the project. Conducted jurisdictional delineations fro California Department of Fish and Game along the linear fiber optic line for AT&T.

Jurisdictional Delineation, Construction Monitoring, AT&T Fiber Optic Line from the City of Victorville, California to the City of Primm, Nevada. Conducted presence/absence surveys for the desert tortoise along the linear fiber optic line for AT&T. Presence/absence surveys were conducted in California from Stoddard Wells Rd. in Victorville to Slash X Ranch, from Halloran Summti Rd. to Cima Rd. in Baker, and From Nipton Rd, to State Line (Primm, Nevada). Surveyed the project area and the 100 ft. and 300 ft. ZOI transect lines. Tortoise burrows, scat, and a scute were observed in various places along the route. Surveys followed protocol set out by USFWS. Detailed notes and GPS points were recorded when any desert tortoise sign was observed or detected. Conducted construction monitoring as the assistant lead on the project from Los Vegas, Nevada to Primm, Nevada and in California from Primm, Nevada to Nipton Rd. and from Cima Rd. to Halloran Summit Rd. Monitoring included trenching, pipe installation, backfilling, restoration, compaction, vault installation, proofing, cable pulling, splicing, and post installation/replacement. Eighteen tortoises were found along the project site in Nevada and only three had to be handled, in order to be moved away from the approaching construction equipment. One tortoise was found in California between Primm and Nipton Rd., this tortoise was not handled. No tortoises were harmed as a result of any of the project activities in California or Nevada.

Construction Monitoring, Arroyo Trabuco Creek Railroad Bridge Replacement, San Juan Capistrano, Orange County – Southern California

Relevant Experience (Continued)

Regional Rail Authority. Monitored compliance of activities with the 1600 Streambed Alteration Agreement during the replacement of the railroad bridge above Arroyo Trabuco Creek. Conducted preconstruction surveys for nesting birds and bats. Monitored vegetation removal and protection of the creek during construction.

MSHCP Habitat Assessment, Focused Plant Surveys, Day Street Extension, Moreno Valley, Riverside County – City of Moreno Valley, sub to AEI-CASC Engineering. Walked pedestrian transects according to the Burrowing Owl Consortium guidelines (1993). Covered 100% of the project sites as well as a 150 meter buffer. Any burrowing owls or sign (white wash, pellets, etc.) were recorded on standardized data sheets. No burrowing owls or burrowing owl sign were observed or detected. Conducted a focused plant survey for the potential of the occurrence of three state- or federally-listed threatened or endangered plant species, Munz's onion (*Allium munzii*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), and thread-leaved brodiaea (*Brodiaea filifolia*), on the project site. Covered 100% of the project sites as well as a 150-meter buffer around the project sites boundaries.

Habitat Assessment, Oakmont Ramona Expressway Project, Perris, Riverside County – Golder Associates. Conducted a habitat assessment on old agricultural fields with ruderal, a small strip of riparian vegetation, and tiny section of ornamental landscaping. Burrowing owl sign was detected on site during the habitat assessment, therefore, a focused burrow survey during non-breeding season was conducted. No burrowing owls were observed, but a focused burrow survey will be required by WR-MSHCP during breeding season in order to avoid take of the species. Wrote the report documenting the findings of the assessment and focused burrow survey.

Least Bells' Vireo and Southwestern Willow Flycatcher Biological Surveys, SR-60 and Grand Avenue Interchange Improvement Project, Diamond Bar, Los Angeles County – EIP Associates, a Division of PBS&J, sub to Sage Environmental Group. Chambers Group biologists conducted presence/absence focused surveys for southwestern willow flycatcher and least Bell's vireo at a section of Diamond Bar Creek known as Brea Wash and three tributaries that flow into the wash from under the freeway. All potential habitats within the project site were surveyed and nesting status of each pair was documented. Maps included project location and observed species locations and individual nest sites where found.

Habitat Assessment, Lasselle Street Widening from John F. Kennedy Drive to Alessandro Boulevard, Moreno Valley, Riverside County – City of Moreno Valley, sub to PSOMAS. Conducted a habitat assessment from John F. Kennedy Dr. to just past Alessandro Blvd. along Lasselle St for the burrowing owl. Habitat suitable for the burrowing owl was present on the project site, thus a Focus Burrow Survey for the burrowing owl will be required according to the western Riverside MSHCP. Co-authored the biological report documenting the findings of the habitat assessment. A Focused Burrow Survey was conducted during the breeding season for the burrowing owl. Wrote the report of findings of the Focused Burrow Survey.

Relevant Experience (Continued)

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Conducted a focused survey for the desert tortoise, covering 100% of the project site for 43 miles from mile post 679 to mile post 722, in 2007. In 2008, presence/absence surveys were extended from mile post 722 to 725..8, which occurred on the Quechan Indian Reservation. Surveys were conducted following Fish and Wildlife Service protocols of 1992. Old desert tortoise burrows and possible old scat were detected on site. GPS locations, photos, and detailed notes were taken upon detection of all sign. No desert tortoise or desert tortoise carcasses were detected on site. Also, conducted the pre-construction surveys, clearance surveys and monitoring for the desert tortoise. Assisted with focused surveys for Peirson's milk-vetch and Algodones Dunes sunflower and other rare species with a potential to occur on the project site. During surveys conducted in 2008, one sensitive plant species, Harwood's milk-vetch, was detected within the project site during the Chambers Group focused plant survey. This CNPS list 2.2 species is an annual herb that occurs in dune and Mojave Desert scrub habitats at elevations up to 3,330 feet amsl. The flowering period for this species is between January and May. This species was observed at 19 locations between MP 722.38 and 723.77 with a total of 182 individuals present in this area. A map of populations and the GPS data for each location were mapped.

Habitat Assessment, Wetland Delineation and Jurisdictional Determination, Kitching Street Improvements Project, Moreno Valley, Riverside County – City of Moreno Valley, sub to Proactive Engineering Consultants, Inc. Habitat for the burrowing owl does exist on the project site; therefore, according to the Burrowing Owl Survey Instructions for the Western Riverside County MSHCP, a Focused Burrow Survey will be required as well as a pre-construction survey within 30 days prior to ground disturbance to avoid direct take of burrowing owls (TLMA 2006). Wrote the report documenting the findings of the survey. Assisted with the wetland delineation in the drainage ditch on the southeast corner of Kitching St. and Alessandro Blvd. Results indicated that the drainage is a wetland and that the waters are jurisdictional due to the fact that they flow into the San Jacinto River, which flows into Canyon Lake.

Habitat Assessment, Biological and Regulatory Permitting Services for Reclaimed Water System Pipeline, Norco, Riverside County – City of Norco, sub to RGP Planning & Development Services. Conducted a survey for habitat potentially suitable for burrowing owl (*Athene cunicularia*) and Narrow Endemic Plant Species. Habitat suitable for the burrowing owl was present on a portion of the project site and so a Focus Burrowing Owl survey was recommended. Co-authored the biological report documenting the findings of the focused surveys.

Desert Tortoise Clearance Surveys, Palmdale Water Reclamation Plant Stage 5 Effluent Management Facilities, Palmdale, Los Angeles County – Los Angeles County Sanitation District. The Palmdale Water Reclamation Plant Stage Five Effluent Management Facilities project involves construction of storage reservoirs. As part of USFWS approval, the Districts have committed to

Relevant Experience (Continued)

install a fence around the storage reservoirs to keep tortoises out. Clearance surveys will be performed within the area upon completion of the fence to ensure desert tortoises have not been trapped inside the fenced area. This desert tortoise clearance survey within the fenced area will follow the appropriate USFWS protocol.

Biological and Cultural Resources Surveys, Jurisdictional Delineations, Pre-Construction and Construction Monitoring, Track Upgrade Project, Thermal, CA to Yuma, AZ, San Bernardino and Imperial County – Union Pacific Railroad, Yuma Subdivision, sub to Parsons Water & Infrastructure. Associate Biologist. Performed the reconnaissance surveys. The project involved conducting biological surveys, vegetation mapping and wetland delineations along 100-mile-long corridor. The field survey focused primarily on determining the potential habitat for federal- and state-listed plant and wildlife species. Conducted focused plant surveys for the Algodones Dunes sunflower (*Helianthus niveus ssp. tephrodes*) and Peirson's milkvetch (*Astragalus magdalenae var. peirsonii*) covering 100%of the project site for 17 miles form mile post 698 to mile post 715. No plants were found on site at the time of the survey. Conducted presence/absent surveys for the desert tortoise, following the protocol set out by the USFWS. I conducted focused surveys for burrowing owl. When an active burrow was located in the footprint of the project construction, I and another Chamber's Group biologist, placed one way doors and collapsed the burrow when we new the owl was no longer inside (Burrowing Owl Consortium 1993). Chambers Group biologists conducted focused surveys for the following five wildlife species during months of activity; desert pupfish, California black rail, Yuma clapper rail, least Bell's vireo, and southwestern willow flycatcher. I conducted pre-construction surveys and performed construction monitoring for the desert tortoise.

Construction Monitoring, Water Reclamation Project in Palmdale, Los Angeles, California - Los Angeles Sanitation District. Monitored all construction activities which included; the installation of a pipeline, vaults, pump station, and reservoirs. No tortoises were detected/observed on the project site; however, old desert tortoise burrows without recent sign were observed. I wrote daily monitoring reports of each day's activities and findings.

JENNY MCGEE

Staff Biologist/ Botanist

Ms. McGee has a strong background in natural resource management with five years of experience working in central and southern California as well as northwestern Nevada. Her project management experience includes functioning as project manager and lead biologist responsible for drafting and implementing restoration and management plans. She specializes in invasive species management, success monitoring of sensitive plant species and communities, focused plant and reconnaissance surveys, vegetation community mapping, annual success monitoring, compensatory mitigation negotiation, agency coordination, habitat restoration implementation, and native plant propagation. As project manager, Ms. McGee managed project teams and schedules and maintained budgets and contracts. She has been central to accomplishing project goals through working closely with native landscaping, nursery, and native seed collection contractors, establishing contacts, maintaining communications, and providing QA/QC. Ms. McGee has experience coordinating across disciplines with various regional, state, and federal agencies; schools; special interest; and community groups. Her experience also includes designing erosion control retrofits, water quality monitoring, permit compliance, construction monitoring, and the preparation and technical review of restoration plans and various other technical reports.

Key Strengths

Compensatory Mitigation Negotiation

Habitat Restoration Plans

Botanical Surveys

Agency Coordination

Permit Compliance

Managed projects related to restoration, restoration monitoring, and botanical surveys

Habitat Assessments

Erosion Control Retrofits and Inspection

Relevant Experience

Biological Surveys & Monitoring, East Fork Bridge Seismic Retrofit, Azusa, Los Angeles County – Los Angeles County Department of Public Works. Staff Biologist/ Botanist. Conducted literature review and general reconnaissance survey, completed vegetation classifications and mapping and prepared Biological Assessment / Biological Evaluation Report. Survey findings determined the existence of designated critical habitat and presence of federally–endangered Santa Ana Sucker as well as California Species of Concern speckled dace, and the arroyo chub within the project boundary.

Biological Reconnaissance Surveys, Sawpit Dam, Morris Dam, San Dimas Spreading Grounds, San Gabriel River, and San Gabriel Bypass Road, Los Angeles County – Los Angeles County Department of Public Works. Staff Biologist / Botanist. The project involved biological reconnaissance surveys for various sites damaged by flood waters. Identified and mapped vegetation communities, conducted CNPS rapid assessment surveys to evaluate streamside conditions and pre- and post- dewatering of the dam, conducted vegetation mapping and community classification, conducted focused plant surveys, and performed functional anaylsis surveys to assess habitat function and value. Assisted in conducting avian point count surveys and fish surveys.

San Dimas Reservoir Cleanout Project, San Dimas, Los Angeles County – LADPW, Programs Development Division. Staff Biologist/ Botanist. Conducted CNPS rapid assessment surveys, vegetation mapping and focused plant surveys for the San Gabriel bedstraw, San Gabriel Mountains dudleya, Nevin's barberry and Plummer's mariposa lily. to evaluate streamside conditions pre and post de-watering of the dam.

Relevant Experience (Continued)

Education

B.A., Environmental Studies, UC Santa Cruz, California; 2001

Registration

California Department of Fish and Game, Scientific Collector's Permit # SC-10194

Memberships

Society of Ecological Restoration, California, member, current

California Invasive Plant Council, member, current

Southern California Botanists, member, current

Trainings and Certifications

Rancho Santa Ana Botanic Garden, Native Grasses of California

Wetland Training Institute, USACE permits

Project Management training

Leadership Training

First Aid/ CPR

Biological Surveys and Monitoring, Big Dalton Dam Sediment Removal, Glendora, Los Angeles County – Los Angeles County Department of Public Works, Water Resources Division. Staff Biologist/ Botanist. Conducted vegetation mapping and assessments to evaluate project impacts, pre- and post-dewatering. Surveys conducted included vegetation mapping, plant assessments using the CNPS Rapid Assessment Protocol, focused plant surveys, amphibian, reptile, fish, avian, and mammal tracking surveys, stream assessments and macroinvertebrate collections from above the reservoir to 2 miles downstream of the Big Dalton Dam. In addition, coast range newts were identified on site, and a Newt Monitoring and Relocation Plan was developed and approved by CDFG. Biological monitoring and newt relocation during construction activities took place daily over a period of 5 months. Data and analysis of the project is provided in the Pre- and Post-Dewatering Biological Technical Report for the Big Dalton Dam Reservoir Cleanout Project.

Functional Analysis and Focused Biological Surveys, San Gabriel River Sediment Management Plan, Azusa, Los Angeles County -- Los Angeles County Department of Public Works. Staff Biologist/Botanist. Conducted vegetation mapping and functional analysis surveys. A functional analysis methodology was formulated based on the USACE of Engineer's Hydro Geomorphic Analysis and Habitat Evaluation Procedures to assess and compare the biological resources of the two sites. Data related to the biological, physical, and biogeochemical functions at each site were collected on transects in upland, riparian, and aquatic habitats to complete the functional analysis. Geographic Information System mapping techniques were used to create vegetation maps for use in the functional analysis. A biological resources assessment report was written which included the methodology used for field survey and functional analysis techniques, a discussion of existing conditions at both sites, and the functional analysis comparing the sites.

Natural and Cultural Resources Management Plan, Rancho Las Flores Development, Hesperia, San Bernardino County – Rancho Las Flores, LLC. Staff Botanist. Conducted a focused plant survey in the entire project area on portions of the 9,867-acre site for the presence/absence of Santa Ana River woollystar, slender-horned spineflower, Nevin's barberry, Parish's checkerbloom, Parry's spineflower, Plummer's mariposa lily, and other sensitive plant species in order to update the biological resources studies for the project site.

Biological Surveys Including Focused Plant Surveys for Hampton Heights Development Project, San Bernardino County – House Land Development Co. Staff Botanist. Identified and mapped the vegetation communities, documented the existing biological resources and assessed the habitat for its potential to support sensitive plant and wildlife species on the parcel located near the city of Yucaipa, California. Conducted focused plant surveys for sensitive plant species over the 463-acre project site.

Aerial mapping and Survey of Endangered Plant Population – Santa Barbara County. Lead Botanist. Chambers Group was retained to advise this client in the resolution of land use challenges relevant to managing protection of a with oil and gas exploration on private land. The federally-listed endangered and state-listed rare plant species is encroaching into operational areas generating a unique challenge to the property owner. Chambers Group

Relevant Experience (Continued)

conducted a comprehensive field survey mapping the distribution of the protected plant species population throughout the 2,000 acre property. Following the survey, Chambers Group facilitated discussions with the U.S. Fish and Wildlife Service and the California Department of Fish and Game and obtained authorization for the client to conduct limited maintenance activities in specified facility locations to control encroachment of the sensitive plant species.

Environmental Assessment, International Border Fuel Break Project, Tecate, San Diego County – BLM: Palm Springs-South Coast Field Office, sub to Labat Environmental, Inc. Staff Biologist. Conducted literature review, biological reconnaissance survey, vegetation community map, and assisted in preparation of Environmental Assessment report. The project area consists of 639 acres of BLM-managed lands within the International Border Fuel Break project site between Otay Mountain and the community of Campo, located east and west of the City of Tecate, east of State Highway 805 and south of State Highway 94 in San Diego County, California. The project has 5 segments, covers 35 total miles and includes habitat for several sensitive species, such as Quino checkerspot butterfly, California gnatcatcher, Tecate cypress, least Bell's vireo, and arroyo toad. Overall habitat was evaluated, flora and fauna species observed or detected were recorded and vegetation community associations were mapped on aerial photographs and transferred into a GIS graphic image.

Environmental Assessment of Monument Fuels Management Project, Pinyon and Snow Creek, Palm Desert, Riverside County – Bureau of Land Management, Palm Springs-South Coast Field Office, sub to Labat Environmental. Staff Biologist and Botanist. This project was located in the Santa Rosa and San Jacinto Mountains National Monument Management Plan area on BLM-managed public lands, USFS-managed lands. Conducted literature review, general reconnaissance survey and prepared vegetation community classification/ distribution map. Preparation of Environmental Assessment Report including recommendations for avoidance and minimization strategies for sensitive species identified within the project boundary. The project area intersects habitat for Pennisular bighorn sheep, desert tortoise, grey vireo, and triple-ribbed milk-vetch.

Clearance Surveys, Restoration Planning and Implementation, Biological Monitoring, Marblehead Coastal Project, SunCal Properties, San Clemente. Project Manager and Project Biologist. Project included restoration of coastal habitats on master planned commercial and residential development. Directed and conducted 34 acres of habitat restoration. Conducted plant health assessments, annual performance monitoring and associated reporting. Provided oversight for all restoration activities, and completed a constraints analysis to avoid impacts to the Blochman's dudleya, Coastal Bluff Scrub and California Needlegrass Grassland habitats on site. Directed and conducted the collection of baseline vegetation data and annual performance monitoring of vegetation communities that have become rare along the coast.

MAYA MAZON

Assistant Biologist

Ms. Mazon recently led a field team to survey post-fire areas in San Diego County. This required a working knowledge of San Diego flora and the ability to work in harsh conditions. As the crew leader, she had to be organized, learn quickly, and be able to communicate and work with the field team effectively. In addition, Ms. Mazon has 4 years experience in plant physiological ecology research. She is confident with her skills in the following relevant areas: plant identification (esp. San Diego and Orange County); plant propagation; GPS technology; insect trapping, identification and preservation; and small mammal trapping. She is also very familiar with ArcGIS and the acquisition of primary scientific literature for presenting research findings in oral and poster presentations and technical reports.

Key Strengths

Biological Resource Surveys

Southern California Native Plant Identification

Plant Physiological Ecology

Field Crew Supervision

Expert Use of GPS Technology/Software

Specialized Training

Quino Checkerspot Butterfly Service-approved practical exam (Pass) – Carlsbad, California, 2009

Field Botany and Plant Taxonomy Coursework, CSUF 2001-2005

Relevant Experience

United States Geological Survey, San Diego, San Diego County. California. Field Crew Lead/Technician /Botanist. Led a team that conducted vegetation surveys to determine post-fire recovery of native flora. Surveys were conducted at 6 different sites containing numerous plots per site where 100 percent coverage was attained . Sites included areas with rare plants such as the Tecate cypress (*Cupressus forbesii*) and the chocolate lily (*Fritillaria affinis*). Plant density and fire severity measurements were taken. A complete plant species inventory was created, which totaled more than 350 species. Duties also included the teaching plant identification of San Diego flora to on-site team members and identifying unknown plant species using vegetative keys. In addition, complete species composition and vegetation community typing was conducted at separate herpetological and entomological post-fire recovery project sites. These surveys were conducted at 5 different sites with multiple plots per site.

United States Geological Survey, Sequoia and Kings Canyon Office. Field Crew Leader. Led a team conducting vegetation surveys in San Diego County for post-fire recovery of native flora. Coordinated orders remotely between the USGS office and field crew. Completed administrative tasks (i.e., tracked and completed crew's timesheets, booked camping accommodations, tracked finances, etc.). Collected and digitized data in Microsoft Access. Scouted and established new sites for future surveys.

Functional Analysis Comparison Along the San Gabriel River, Los Angeles County -- LACDPW. Assistant Biologist. Collected data for a complete functional analysis, based on the USACE Hydrogeomorphic Analysis and Habitat Evaluation Procedures. The functional analysis was conducted to assess and compare the biological resources along the length of the San Gabriel River, from the West Fork downstream to the Santa Fe Reservoir Spreading Grounds. Data related to the biological and physical function were collected at each permanent data collection transect location in the upland and riparian habitats of the site.

Education

MS, Biology, California State University, Fullerton, exp. 2009

BS, Biology California State University, Fullerton, May 2002

Relevant Experience (Continued)

AT&T Fiber Optic Cable – Las Vegas to Victorville Project, Multiple County – AT&T, sub to Forkert Engineering & Surveying, Inc. Ms. Mazon monitored construction activites to ensure equipment was in compliance with all associated permits for the project. She performed pre-construction surveys for desert tortoise and for noxious weeds. In addition, Ms. Mazon assisted with the relocation of cacti and other succulents in accordance with the Succulent Relocation Plan for the project.

San Marcos Landfill Restoration Project, San Marcos, San Diego County – County of San Diego Department of Public Works, sub to Kleinfelder. Ms. Mazon performed annual vegetation monitoring on the 103-acre landfill. Vegetation transects were run through the landfill to assess the cover and species composition of the restored habitat. Data were analyzed to determine whether the site met the fifth year performance standards and reports were submitted.

California State University, Fullerton. Teaching Associate. Direct and instruct undergraduate non-biology college students in experiment driven environment. Created power point presentations to aid in teaching complex biological concepts. Monitor student progress and managed activities to ensure completion within time constraints. Interacted with students of diverse ethnic and socioeconomic backgrounds. Accomplishments: Introduced and implemented new department curriculum. Developed successful methods for teaching inexperienced students.

Field Assistant. Setup and baited Sherman traps for small mammals in burned and unburned areas of the Mohave Desert. Setup and collected seed trays.

Graduate Student Researcher. Investigated tree rings in a tropical tree species. Conducted stable isotope (5OIS and 8Cb) measurements of wood cellulose from a fountain grass invaded and non-invaded site to assess water source differences of a tropical tree species. Transcribed research efforts into a thesis. Researched and trouble-shot methods from different disciplines. Mentored and trained undergraduate researcher. Accomplishments: Conducted novel research on a tree species from an endangered area, the tropical dry forest. Utilized creative problem solving to successfully alter established protocols.

Field Assistant. Emergence study of native and invasive plant species in disturbed and non-disturbed biological soil crust areas in the coastal sage scrub of Limestone canyon. Scouted plot sites and setup plots. Recorded UTMs and relevant site data. Accomplishments: Advanced implementation of experiment by altering project design. Designed solutions to trouble shoot logistical problems.

APPENDIX C – WILDLIFE SPECIES OBSERVED/DETECTED ONSITE

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Appendix C
Wildlife Species Observed/Detected During Habitat Assessment on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
CLASS AVES	**BIRDS**
ODONTOPHORIDAE	**NEW WORLD QUAIL**
Callipepla californica	California quail
COLUMBIDAE	**PIGEONS & DOVES**
Columba livia	rock pigeon
Zenaida macroura	mourning dove
ALAUDIDAE	**LARKS**
Eremophila alpestris	horned lark
CORVIDAE	**JAYS & CROWS**
Corvus corax	common raven
STRUTHIONIDAE	**EMUS, KIWIS, and other RATITES**
Struthio camelus	ostrich
STURNIDAE	**STARLINGS**
Sturnus vulgaris	European starling
EMBERIZIDAE	**EMBERIZIDS**
Amphispiza bilineata	black-throated sparrow
FRINGILLIDAE	**FINCHES**
Carpodacus mexicanus	house finch
CLASS MAMMALIA	**MAMMALS**
SCIURIDAE	**SQUIRRELS**
Ammospermophilus leucurus	Antelope ground squirrel
Spermophilus tereticaudus	Round-tailed ground squirrel
LEPORIDAE	**HARES & RABBITS**
Lepus californicus	black-tailed jackrabbit
Sylvilagus audubonii	desert cottontail
CANIDAE	**WOLVES & FOXES**
Canis familiaris	domestic dog
Vulpes velox	kit fox

APPENDIX C
Wildlife Species Observed/Detected During DT/BO Surveys on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
CLASS INSECTA	**INSECTS**
PIERIDAE	**WHITES & SULPHURS**
Pontia protodice	Common white
NYMPHALIDAE	**BRUSH-FOOTED BUTTERFLIES**
Vanessa cardui	Painted lady
SPHINGIDAE	**SPHINX MOTHS**
Hyles lineata	White-lined sphinx moth
CLASS REPTILIA	**REPTILES**
TESTUDINIDAE	**LAND TORTOISES**
Gopherus agassizii	desert tortoise
CROTOPHYTIDAE	**COLLARED AND LEOPARD LIZARDS**
Gambelia sila	blunt-nosed leopard lizard
PHRYNOSOMATIDAE	**ZEBRA-TAILED, EARLESS, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNY LIZARDS**
Callisaurus draconoides draconoides	common zebra-tailed lizard
Dipsosaurus dorsalis	desert iguana
Phrynosoma platyrhinos	desert horned lizard
Uta stansburiana	common side-blotched lizard
TEIIDAE	**WHIPTAIL LIZARDS**
Cnemidophorus tigris tigris	Great Basin whiptail
VIPERIDAE	**VIPERS**
Crotalus scutulatus	Mojave green rattlesnake
Crotalus cerastes	sidewinder rattlesnake
CLASS AVES	**BIRDS**
CATHARTIDAE	**NEW WORLD VULTURES**
Cathartes aura	turkey vulture
ACCIPITRIDAE	**HAWKS, KITES, EAGLES**
Buteo jamaicensis	red-tailed hawk
Circus cyaneus	Northern Harrier
FALCONIDAE	**FALCONS**
Falco mexicanus	prairie falcon
SCOLOPACIDAE	**SANDPIPERS**
COLUMBIDAE	**PIGEONS & DOVES**
Zenaida macroura	mourning dove
STRIGIDAE	**TRUE OWLS**
Asio flammeus	short-eared owl
Athene cunicularia	burrowing owl

APPENDIX C
Wildlife Species Observed/Detected During DT/BO Surveys on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
CLASS AVES	**BIRDS**
CAPRIMULGIDAE	**NIGHTHAWKS**
Chordeiles acutipennis	lesser nighthawk
ALAUDIDAE	**LARKS**
Eremophila alpestris	horned lark
HIRUNDINIDAE	**SWALLOWS**
Petrochelidon pyrrhonota	cliff swallow
Hirundo rustica	barn swallow
CORVIDAE	**JAYS & CROWS**
Corvus corax	common raven
SYLVIIDAE	**OLD WORLD WARBLERS, GNATCATCHERS**
Polioptila melanura	black-tailed gnatcatcher
MIMIDAE	**MOCKINGBIRDS, THRASHERS**
Toxostoma lecontei	Le Conte's thrasher
EMBERIZIDAE	**EMBERIZIDS**
Amphispiza belli	sage sparrow
Amphispiza bilineata	black-throated sparrow
Zonotrichia leucophrys	white-crowned sparrow
FRINGILLIDAE	**FINCHES**
Carduelis psaltria	lesser goldfinch
Carpodacus mexicanus	house finch
CLASS MAMMALIA	**MAMMALS**
LEPORIDAE	**HARES & RABBITS**
Lepus californicus	black-tailed jackrabbit
Sylvilagus audubonii	desert cottontail
SCIURIDAE	**SQUIRRELS**
Ammospermophilus leucurus	white-tailed antelope squirrel
HETEROMYIDAE	**POCKET MICE & KANGAROO RATS**
Dipodomys sp.	kangaroo rat
CANIDAE	**WOLVES & FOXES**
Canis familiaris	domestic dog
Canis latrans	coyote
Vulpes macrotis	kit fox
Urocyon cinereoargenteus	gray fox

APPENDIX C
Wildlife Species Observed/Detected During DT/BO Surveys on the Chevron Solar Project (Lucerne Valley) Site

Scientific Name	Common Name
CLASS MAMMALIA	**MAMMALS**
PROCYONIDAE	**RACCOONS**
Procyon lotor	raccoon
EQUIDAE	**HORSES & BURROS**
Equus caballus	horse
Equus asinus	wild burro
BOVIDAE	**BISON, GOATS & SHEEP**
Bos bovis	domestic cow
Ovis aries	domestic sheep

APPENDIX D – FIELD DATA SHEETS

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Chambers Group Inc.
Desert Tortoise
PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

BIOLOGIST(S) S.Skidmore, P.Morrissey, R.Alvidrez, L.Wadley **DAY & DATE** ~~Monday~~ Tuesday 3/31/09

PROJECT NAME & NUMBER Chevron Solar, 20047

City: Lucerne Valley **County:** San Bernardino **State:** CA

Transect# ——— **MP to MP (mileposts):** southeast portion of the site **Length:** ——— **ft. Width: 30 ft. OR** ____ **ft.**

Project Site/ROW ☒ **Zone of Influence (ZOI)** ☐ ≤500 **Ft. from Project ROW**

Time (start): 0845 **Cloud %** 0 **Temp:** 51.4 **Wind:** 1.2 avg **Elevation:** 3209 **ft.**

Time (end): 1545 **Cloud %** 5 **Temp:** 80 **Wind:** 1.0 avg **Elevation:** 3223 **ft.**

Aspect ~~slope~~ north facing slope & valley **%Slope** 0-20 **Adjacent Land Use** scattered residential & open space

Vegetation Community Creosote - White bursage series

Soil (rock, sand, caliche etc.) sandy, gravelly **Land Form(s)- mesa, bajada, wash etc.** mesa/bajada w/washes

SIGNS OF HUMAN DISTURBANCE – NUMBER AND TYPES SEEN

☒ TIRE TRACKS ☒ SHOTGUN/RIFLE SHELLS ☐ BLADING ☒ RAVENS ☐ TRASH
☐ DUMP SITES ☐ HUMAN FOOTPRINTS ☐ DOG SIGN ☐ OTHER

INFORMATION ON TORTOISE SIGN

SIGN #	TYPE scat, bone, burrow, etc.	CLASS# For scat burrows, shell remains	W x H x L or SIZE Width x Height x Length	Burrow Direction (aspect)	Nearest Plant Species	Elev. (feet)	GPS location (NAD 83)
1	4 burrows	~~0~~ 4	4 x 6 x ?	W	Ambrosia dumosa	3186	0518089 3808111
2	↓	5 ↓	9 x 7 x ?	W	↓	↓	↓
3			8 x 5 x ?	W			
4			8 x 8 x ?	W			
5	burrow	5	10 x 5 x 8	~~0~~ W	Ambrosia dumosa	3195	0518009 3807970
6	plant	——		——	Winter Fat	3306	0517842 3807921
7	tracks	——	2"	——		3220	0518297 3807765
8	burrow	1	12 x 8 x ?	W	Ambrosia dumosa	↓	↓
9	scat	2	1-2"	——			

Sign #	Comments on Conditions of shelter sites (active/inactive-why?), scat, shell remains, human disturbances. (continue on page 2 if necessary)
1-4	burrows turn & go in far - may be fox photos #1-4 of burrows 1-4 from N→S
[illegible]	on the banks of a sandy wash - definitely fox - more entrance/exits east of wash
5	- old DT, looks like the opening originally began at the ambrosia but is almost
4	completely collapsed now - photo #6
7	photo #7 & 8 - tracks - DT - Found around Lauries burrow & my sign #8
	- scat located along tracks, tracks all around burrows ≈ 200 ft out
8	burrow looks used, tracks go into it - class 2 scat in & around - photo #9 & 10

9 scat dark brown with odor - photo #11

- photo #5 wash

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Chambers Group Inc.

Desert Tortoise

PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

BIOLOGIST(S) Saraiah Skidmore DAY & DATE Tuesday 3/31/19

INFORMATION ON TORTOISE SIGN

SIGN #	TYPE scat, bone, burrow, etc.	CLASS# For scat burrows, shell remains	W x H x L or SIZE Width x Height x Length	Burrow Direction (aspect)	Nearest Plant Species	Elev. (feet)	GPS location (NAD 83)
10	burrow	1	14 x 6 x 36"	SW	Ambrosia dumosa	3222	11 S 0518383 3807733
11	tracks	—	—	—	—	↓	↓
12	burrow	1	14 x 8 x ?	W	Ambrosia dumosa	3216	0518417 3807679
13	scat	3	1-2"	—	↓	↓	↓

Sign #	Comments on Conditions of shelter sites (active/inactive-why?), scat, shell remains, human disturbances.
10	scat found by Lisa ≈50 ft south — photo #12 & 13 of burrow
	-burrow is at the edge of a wash - tracks in the wash
12	Followed tracks from burrow (sign #10) to here — photo #14
13	photo #15

Chambers Group Inc.
Desert Tortoise
PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

BIOLOGIST(S) S.Skidmore, R.Alvidrez, L.Walley, P.Morrissey, L.Gorman DAY & DATE Wednesday 4/1/09

PROJECT NAME & NUMBER Chevron Solar- 20047

City: Lucerne Valley County: San Bernardino State: Ca

Transect# 4-1 to 4-40 → ⇶ MP to MP (mileposts): → southeast portion of the site Length: —— ft. Width: 30 ft. OR —— ft.

Project Site/ROW ☒ Zone of Influence (ZOI) ☐ & 500 Ft. from Project ROW

Time (start): 0700 Cloud % 80 Temp: 52° Wind: 5.3 avg Elevation: 3244 ft.

Time (end): 01600 Cloud % 2 Temp: 78° Wind: 3.5 avg Elevation: 3150 ft.

Aspect north facing slopes & valley %Slope 0-20 Adjacent Land Use open space & scattered residential

Vegetation Community Creosote-White Bursage Series

Soil (rock, sand, caliche etc.) sandy loam Land Form(s)- mesa, bajada, wash etc [illegible] bajada

SIGNS OF HUMAN DISTURBANCE – NUMBER AND TYPES SEEN

☒ TIRE TRACKS ☑ SHOTGUN/RIFLE SHELLS ☐ BLADING ☒ RAVENS ☐ TRASH

☐ DUMP SITES ☐ HUMAN FOOTPRINTS ☐ DOG SIGN ☐ OTHER

INFORMATION ON TORTOISE SIGN

SIGN #	TYPE scat, bone, burrow, etc.	CLASS# For scat burrows, shell remains	W x H x L or SIZE Width x Height x Length	Burrow Direction (aspect)	Nearest Plant Species	Elev. (feet)	GPS location (NAD 83)
1	DT	—	7"W x 8"L	—	Ambrosia dumosa	3247	0518232 3807553
2	burrow	1		W	Larrea tridentata	↓	↓
3	burrow &	—	10x5 x ?	NE	Larrea tridentata	3123	0517042 3809018
→	pellet & white wash	of BO					
4	plant	—	—	—	Winter Fat (2 Inds.)	3137	0516450 3808964
5	pellet	5	6x5x6	N	Larrea tridentata	3128	0517174 3808928
6	owl pellets & white wash		pellets 1-2"	—	Big galleta grass	3145	0516672 3808811

Sign #	Comments on Conditions of shelter sites (active/inactive-why?), scat, shell remains, human disturbances. (continue on page 2 if necessary)
3	Old fox dens - recently used by BO - pellets & white wash around
	opening - also possible nighthawk pellets in same area - photos 1-3
	~~4~~ burrows next to point 4-1-2
5	possible DT pellet - most likely rabbit - photo# 4
6	possible short-eared owl - photo #5 & 6

Chambers Group Inc.
Desert Tortoise
PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

BIOLOGIST(S) S. Skidmore, L. Wadley, R. Alvidrez, P. Morrissey, L. Gorman DAY & DATE Thursday 04/2/08

PROJECT NAME & NUMBER Chevron Solar - 20047

City: Lucerne Valley County: San Bernardino State: Ca

Transect# 4-40 to 4-64 MP to MP (mileposts): — Length: — ft. Width: 30 ft. OR — ft.

Project Site/ROW ☒ Zone of Influence (ZOI) ☐ & 500 Ft. from Project ROW

Time (start): 0730 Cloud % 0 Temp: 55 Wind: 0.5 avg Elevation: 3126 ft.

Time (end): 1500 Cloud % 0-1 Temp: 80 Wind: 10.0 avg Elevation: 3160 ft.

Aspect in a valley, south of north facing slopes %Slope 0-15 Adjacent Land Use Open space & scattered residential

Vegetation Community white Bursage-Creosote Series

Soil (rock, sand, caliche etc.) Sandy loam Land Form(s)- mesa, bajada, wash etc. bajada

SIGNS OF HUMAN DISTURBANCE – NUMBER AND TYPES SEEN

☐ TIRE TRACKS ☒ SHOTGUN/RIFLE SHELLS ☐ BLADING ☒ RAVENS ☐ TRASH
☐ DUMP SITES ☐ HUMAN FOOTPRINTS ☐ DOG SIGN ☐ OTHER

INFORMATION ON TORTOISE SIGN

SIGN #	TYPE scat, bone, burrow, etc.	CLASS# For scat burrows, shell remains	W x H x L or SIZE Width x Height x Length	Burrow Direction (aspect)	Nearest Plant Species	Elev. (feet)	GPS location (NAD 83)	
1	pallet	5	7x5x8	W	Ephedra fasciula	3145	0517087	3808744
2	plant	—	—	—	Winter Fat (4 inds.)	3166	0516649	3808736
3	plant	—	—	—				
4	plant	—	—		Winter fat (2 inds.)	3158	0516769	3808551
					Winter fat (1 ind.)	3155	0516793	3808416
5	plant	—	—	—	Winter fat (3 inds.)	3153	0516517	3808446

Sign #	Comments on Conditions of shelter sites (active/inactive-why?), scat, shell remains, human disturbances. (continue on page 2 if necessary)
1	photo #1 — most likely jackrabbit but possibly DT due to shape
2	4 inds. w/in 100 Ft along the edge of the wash

Chambers Group Inc.
Desert Tortoise
PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

BIOLOGIST(S) S.Skidmore, R.Alvarez, L.Gorman, L.Wadley DAY & DATE Friday 4/3/09

PROJECT NAME & NUMBER Chevron Solar — 20047

City: Lucerne Valley County: San Bernardino State: Ca

Transect# 4-64 to 4-88 MP to MP (mileposts): ——— Length: — ft. Width: 30 ft. OR — ft.

Project Site/ROW ☒ Zone of Influence (ZOI) ☐ & 500 Ft. from Project ROW

Time (start): 0715 Cloud % 0 Temp: 53° Wind: 13.2 avg Elevation: 3185 ft.

Time (end): 1030 Cloud % 0 Temp: 61.2° Wind: 18 avg Elevation: 3189 ft.

Aspect In a valley north of north facing slopes %Slope 0-15 Adjacent Land Use Open space & scattered residential

Vegetation Community White Bursage-Creosote Series ⟷ Creosote-White Bursage Series

Soil (rock, sand, caliche etc.) sandy loam → sandy Land Form(s)- mesa, bajada, wash etc. bajada

SIGNS OF HUMAN DISTURBANCE – NUMBER AND TYPES SEEN

on dirt road just north of house

☒ TIRE TRACKS ☒ SHOTGUN/RIFLE SHELLS ☐ BLADING ☒ RAVENS ☐ TRASH

☒ DUMP SITES ☐ HUMAN FOOTPRINTS ☐ DOG SIGN ☐ OTHER

INFORMATION ON TORTOISE SIGN

SIGN #	TYPE scat, bone, burrow, etc.	CLASS# For scat burrows, shell remains	W x H x L or SIZE Width x Height x Length	Burrow Direction (aspect)	Nearest Plant Species	Elev. (feet)	GPS location (NAD 83)
NO SIGN TODAY							

Sign #	Comments on Conditions of shelter sites (active/inactive-why?), scat, shell remains, human disturbances. (continue on page 2 if necessary)

Chambers Group Inc.
Desert Tortoise
PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

BIOLOGIST(S) R. Alvidrez, S. Skidmore, L. Gorman, L. Walley DAY & DATE Fri 4-3-09

PROJECT NAME & NUMBER 20047 – Chevron Solar Cougar buttes

City: Lucerne Valley County: San Bernardino State: CA

Transect# 4-64 to 4-88 MP to MP (mileposts): ____ Length: ____ ft. Width: [✓ 30 ft.] OR ____ ft.

Project Site/ROW ☒ Zone of Influence (ZOI) ☒ ____ Ft. from Project ROW

Time (start): 715 Cloud % 0 Temp: 53.4 F Wind: 13.2 Elevation: 3185 ft.

Time (end): 1030 Cloud % 0 Temp: 61.2 F Wind: 18 gusts of 30 mph Elevation: 3189 ft.

Aspect ____ %Slope 0-15 Adjacent Land Use Residential / open space

Vegetation Community white bursage / creosote

Soil ([✓ rock], [✓ sand], [✓ caliche] etc.) ____ Land Form(s)- [✓ mesa], [✓ bajada], [✓ wash] etc. ____

SIGNS OF HUMAN DISTURBANCE – NUMBER AND TYPES SEEN

☒ TIRE TRACKS ☒ SHOTGUN/RIFLE SHELLS ☐ BLADING ☒ RAVENS ☐ TRASH
☒ DUMP SITES ☒ HUMAN FOOTPRINTS ☒ DOG SIGN ☐ OTHER

INFORMATION ON TORTOISE SIGN

SIGN #	TYPE scat, bone, burrow, etc.	CLASS# For scat burrows, shell remains	W x H x L or SIZE Width x Height x Length	Burrow Direction (aspect)	Nearest Plant Species	Elev. (feet)	GPS location (NAD 83)
1	2	winter fat			in Ephedra ; Ambrosia	3188	11S 0517287 3808362
2	1	small winter fat			Larrea tridentata	3188	11S 0517212 3808244
3	2	Winter fat			Ambrosia	3145	11S 0516861 3808223
4	1	winter fat			Ambrosia dumosa	~~3149~~ 3155	11S 0516743 38081
5	4	burrow	12 x 11 x 12'	SW	Larrea tridentata	3180	11S 0516792 3808159

Sign #	Comments on Conditions of shelter sites (active/inactive-why?), scat, shell remains, human disturbances. (continue on page 2 if necessary)
1	2 winter fat in wash sandy/gravelly soil on Ephedra sp ; Ambrosia dumosa
2	1 small winter fat under Larrea tridentata - evidence of herbivory in sandy loamy soil (fine)
3	2 in sandy loamy wash - rocky : 1 growing in between Ambrosia dumosa and Lycium brevipes - 1 growing in adjacent Ambrosia dumosa
4	1 winter fat just east on upland bank of wash sandy loamy and rocky on surface. - evidence of herbivory (stunted branches) adjacent to Ambrosia dumosa

Page 2 of 2 (Please staple to Page 1)

Chambers Group Inc.

Desert Tortoise

PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

BIOLOGIST(S) R. Alvidrez, S. Skidmore, L. German, L. Wadley DAY & DATE Fri - 4-3-09

INFORMATION ON TORTOISE SIGN

SIGN #	TYPE scat, bone, burrow, etc.	CLASS# For scat burrows, shell remains	W x H x L or SIZE Width x Height x Length	Burrow Direction (aspect)	Nearest Plant Species	Elev. (feet)	GPS location (NAD 83)

Sign #	Comments on Conditions of shelter sites (active/inactive-why?), scat, shell remains, human disturbances.
5	1 class 4 burrow / low quality - partially collapsed inside, slightly
	under Larrea tridentata (some white wash) but no sign of pellets.
	scat. - could be used by BO

Chambers Group Inc.
Desert Tortoise
PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

BIOLOGIST(S) P.M. S.S. N.C. DAY & DATE 3/24/09

PROJECT NAME & NUMBER CHEVRON SOLAR

City: LUCERNE VALLEY County: [illegible] B. State: CA

Transect# ____ MP to MP (mileposts): from NE (Santa Fe fire road and foothill plus butler to 500' S. of private res. Length: ____ ft. Width: [✓ 30 ft] OR ____ ft.

Project Site/ROW ☒ Zone of Influence (ZOI) ☐ 500 Ft. from Project ROW

Time (start): 8:30 Cloud % 0 Temp: 47°F Wind: 0-3 Elevation: 3108 ft.

Time (end): 16:30 hrs Cloud % 0 Temp: 74°F Wind: 0,6 Elevation: 3126 ft.

Aspect ____ %Slope ____ Adjacent Land Use Open space, BLM, private res, ag field miles to west.

Vegetation Community creosote-scrub / bursage scrub

Soil (rock, [✓ sand], [✓ caliche] etc.) ____ Land Form(s)- mesa, bajada, [✓ wash] etc., terrace.

SIGNS OF HUMAN DISTURBANCE – NUMBER AND TYPES SEEN

☑ TIRE TRACKS ☑ SHOTGUN/RIFLE SHELLS ☐ BLADING ☑ RAVENS ☑ TRASH
☑ DUMP SITES ☑ HUMAN FOOTPRINTS ☑ DOG SIGN ☐ OTHER

INFORMATION ON TORTOISE SIGN

SIGN #	TYPE scat, bone, burrow, etc.	CLASS# For scat burrows, shell remains	W x H x L or SIZE Width x Height x Length	Burrow Direction (aspect)	Nearest Plant Species	Elev. (feet)	GPS location (NAD 83)
1	burrow	—	10" x 4", 6"	North	creosote, bursage	3076	518414 3809573
2	burrow	—	12" x 12" x 2'	NE	Creosote bursage	3121'	518120 3809552
3	burrow	—	14" x 7 x 1'	N	Creosote, bursage	3114	518151 3809371
4	burrow	—	8" x 8" x 6"	W	Creosote, bursage	3135	518182 3809332
5	burrow	—	12" x 4" x 6"	W	" "	3104	518063 3804311
6	burrow						

Sign #	Comments on Conditions of shelter sites (active/inactive-why?), scat, shell remains, human disturbances. (continue on page 2 if necessary)
1	old class 5 burrow or blk-tailed jackrabbit burrow. photo #1
2	blk tailed jackrabbit burrow but deep - good for refuge/cover photo #2
3	2 burrows in wash photo #3 (lower one goes in 2') - no scat.
4	old blk-tailed jackrabbit burrow. (no scat)
5	blk-t. jr burrow - deep .5-1', no scat

raven, ladder-backed woodpecker, TUVU, MODO, desert horned lizard, long-nosed leopard lizard.
round-tailed ground sq.

Appendix E
Cultural Resources Report
(Confidential – Available from BLM)

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Appendix F
Paleontology Literature and Records Review

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SAN BERNARDINO COUNTY MUSEUM

2024 Orange Tree Lane • Redlands, California USA 92374-4560
(909) 307-2669 • Fax (909) 307-0539 • www.sbcountymuseum.org
TDD (909) 792-1462

COUNTY OF SAN BERNARDINO
PUBLIC AND SUPPORT
SERVICES GROUP

ROBERT L. McKERNAN
Director

1 November 2009

Ecology and Environment, Inc.
attn: Christine McCollum
130 Battery Street, Suite #400
San Francisco, CA 94111

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re: **PALEONTOLOGY LITERATURE AND RECORDS REVIEW, LUCERNE VALLEY SOLAR PLANT, SAN BERNARDINO COUNTY, CALIFORNIA**

Dear Ms. McCollum,

The Division of Geological Sciences of the San Bernardino County Museum (SBCM) has completed a literature review and records search for the above-named project property in the Lucerne Valley region of San Bernardino County, California. The proposed project property is situated in portions of sections 19, 20, 29, and 30, Township 4 North, Range 2 East, San Bernardino Base and Meridian, as seen on the Cougar Buttes, California 7.5' USGS topographic quadrangle (1971 edition).

Previous geologic mapping (Bortugno and Spittler, 1986) indicates that the proposed project property is located entirely upon Quaternary younger alluvium of Holocene or recent age. These sediments have low potential to contain significant nonrenewable paleontologic resources, and so are assigned low paleontologic sensitivity. However, these sediments may overlie older Pleistocene alluvium present in the subsurface. If present, this alluvium would have high potential to contain significant nonrenewable paleontologic resources, depending upon its lithology and depositional context. Similar older Pleistocene sediments elsewhere throughout this region have yielded the fossil remains of Pleistocene vertebrates (Jefferson, 1991; Scott and Cox, 2008). Excavation into these older sediments within the boundaries of this area therefore has high potential to contain significant nonrenewable paleontologic resources, where the sediments are not previously disturbed.

For this review, I conducted a search of the Regional Paleontologic Locality Inventory (RPLI) at the SBCM. The results of this search indicate that no previously known paleontologic resource localities are recorded by the SBCM from the proposed project site, nor from within several miles in any direction.

Recommendations

The results of the literature review and the check of the RPLI at the SBCM demonstrate that excavation for the proposed project property has low potential to impact significant nonrenewable

MARK H. UFFER
County Administrative Officer

NORMAN A. KANOLD,
Assistant County Administrator
Public and Support
Services Group

Board of Supervisors
BRAD MITZELFELT .... First District
PAUL BIANE .... Second District
DENNIS HANSBERGER .... Third District
GARY C. OVITT .... Fourth District
JOSIE GONZALES .... Fifth District

fossil resources. Undifferentiated Quaternary alluvium mapped at the surface has low paleontologic sensitivity. No program to mitigate impacts to fossil resources is recommended for this sedimentary unit at this time.

However, should Pleistocene older alluvium or other fossil-bearing rock units be encountered in the subsurface, or should significant vertebrate fossils be exposed during excavation, a qualified vertebrate paleontologist would be required to develop a program to mitigate impacts to nonrenewable paleontologic resources, including full curation of all recovered resources (Scott and others, 2004). This program would need to be consistent with the provisions of the California Environmental Quality Act (Scott and Springer, 2003), as well as with regulations currently implemented by the County of San Bernardino and the proposed guidelines of the Society of Vertebrate Paleontology.

The County of San Bernardino (Development Code §82.20.040) defines a qualified vertebrate paleontologist as meeting the following criteria:

Education: An advanced degree (Masters or higher) in geology, paleontology, biology or related disciplines (exclusive of archaeology).

Professional experience: At least five years professional experience with paleontologic (not including cultural) resources, including the collection, identification and curation of the resources.

The County of San Bernardino (Development Code §82.20.030) requires that paleontologic mitigation programs include, but not be limited to:

(a) Field survey before grading. In areas of potential but unknown sensitivity, field surveys before grading shall be required to establish the need for paleontologic monitoring.

(b) Monitoring during grading. A project that requires grading plans and is located in an area of known fossil occurrence, or that has been demonstrated to have fossils present in a field survey, shall have all grading monitored by trained paleontologic crews working under the direction of a qualified professional, so that fossils exposed during grading can be recovered and preserved. Paleontologic monitors shall be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors shall be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring is not necessary if the potentially-fossiliferous units described for the property in question are not present, or if present are determined upon exposure and examination by qualified paleontologic personnel to have low potential to contain fossil resources.

(c) Recovered specimens. Qualified paleontologic personnel shall prepare recovered specimens to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Preparation and stabilization of all recovered fossils is essential in order to fully mitigate adverse impacts to the resources.

(d) Identification and curation of specimens. Qualified paleontologic personnel shall identify and curate specimens into the collections of the Division of Geological Sciences, San Bernardino County Museum, an established, accredited museum repository with permanent retrievable paleontologic storage. These procedures are also essential steps in effective paleontologic mitigation and CEQA compliance. The paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities. Mitigation of adverse impacts to significant paleontologic resources is not considered complete until curation into an established museum repository has been fully completed and documented.

(e) Report of findings. Qualified paleontologic personnel shall prepare a report of findings with an appended itemized of specimens. A preliminary report shall be submitted and approved before granting of building permits, and a final report shall be submitted and approved before granting of occupancy permits. The report and inventory, when submitted to the appropriate Lead Agency along with confirmation of the curation of recovered specimens into the collections of the San Bernardino County Museum, will signify completion of the program to mitigate impacts to paleontologic resources.

References

Bortugno, E.J. and T. E. Spittler, 1986. Geologic map of California, San Bernardino sheet, scale 1:250,000. California Division of Mines and Geology Regional Geologic Map Series, Map 3A.

Jefferson, G.T., 1991. A catalogue of late Quaternary vertebrates from California: Part Two, mammals. Natural History Museum of Los Angeles County Technical Reports, No. 7.

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Scott, E. and K. Springer, 2003. CEQA and fossil preservation in southern California. The Environmental Monitor, Fall 2003, p. 4-10, 17.

Scott, E., K. Springer and J.C. Sagebiel, 2004. Vertebrate paleontology in the Mojave Desert: the continuing importance of "follow-through" in preserving paleontologic resources. In M.W. Allen and J. Reed (eds.) The human journey and ancient life in California's deserts: Proceedings from the 2001 Millennium Conference. Ridgecrest: Maturango Museum Publication No. 15, p. 65-70.

Please do not hesitate to contact us with any further questions you may have.

Sincerely,

Eric Scott, Curator of Paleontology
Division of Geological Sciences
San Bernardino County Museum

Appendix G
Dust Control Plan

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LUCERNE SOLAR PROJECT

Dust Control Plan

Prepared by

CHEVRON ENERGY SOLUTIONS150 E. Colorado Blvd suite 360Pasadena, CA 91105

Revised

July 2010

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Dust Control Plan

1.0 INTRODUCTION

FRV, Lucerne Solar L.P. (Lucerne Solar), is planning to build a phased construction, 45 MW, solar photovoltaic power plant on 516 acres of BLM land in San Bernardino County. The site of the proposed Projects is located on Santa Fe Fire Trail, south of Old Woman Springs Road approximately 8 miles east of the junction of Barstow Road and Old Woman Springs Road as shown on Figure 1: General Facility Location.

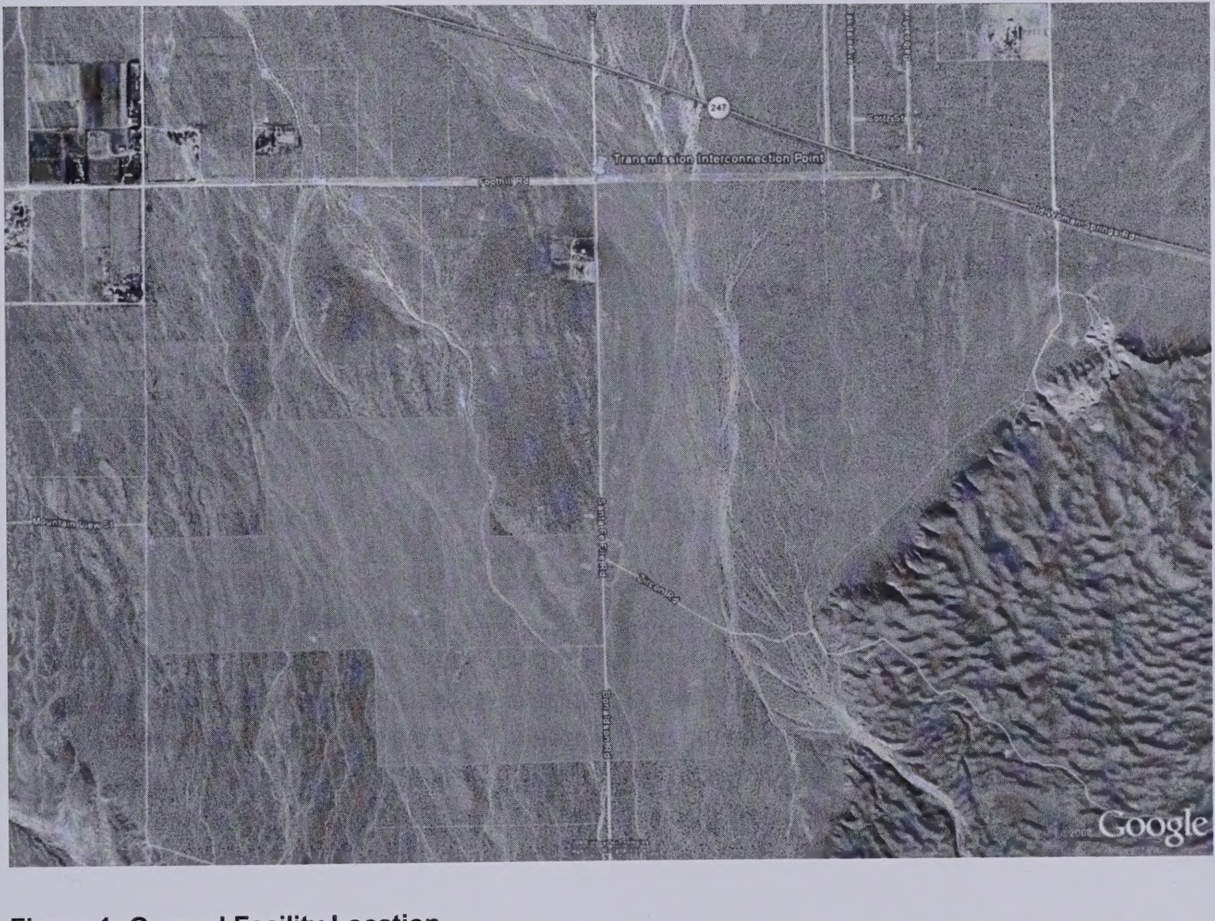

Figure 1: General Facility Location

The first phase will be 20 MW beginning construction in late 2010. The remaining phase of approximately 25 MW is dependent upon the availability of transmission capacity and the timing of future power sales contracts.

Construction of the proposed facilities will result in fugitive dust. Fugitive dust is particulate matter that is suspended in the air by wind or human activities and does not come from a point source such as a stack. Air quality regulations require the use of control techniques to minimize fugitive dust emissions. The goal is to eliminate visible airborne fugitive dust to the extent possible, given the construction techniques and requirements. This plan is designed to reduce fugitive dust emissions to a minimum from the Project.

2.0 FUGITIVE DUST SOURCES ON THE LUCERNE SOLAR PROJECT

Fugitive dust can be created directly from the activities involved in project construction such as vegetation removal, grading, trenching, backfill, or topsoil replacement. Vehicles and equipment moving rapidly on unsurfaced roads and work areas can also create dust, while significant wind action on unprotected spoil piles or topsoil storage areas is yet another source of dust. These activities consist of a series of different operations, each with its own duration and potential for dust generation. In other words, emissions from any single construction site can be expected 1) to have a definable beginning and an end, and 2) to vary substantially over different phases of the construction process. This is in contrast to most other fugitive dust sources, where emissions are either relatively steady or follow a discernable annual cycle.

This dust control plan applies only to fugitive dust generated by construction activities and vehicle trips by support equipment on unpaved roads.

3.0 APPLICABLE RULES

The Lucerne Solar project is under the purview of the Mojave Desert Air Quality Management District (MDAQMD). The district's RULE 403.2, Fugitive Dust Control for the Mojave Desert Planning Area, was developed to ensure that the National Ambient Air Quality Standards (NAAQS) for PM10 will not be exceeded due to anthropogenic sources of fugitive dust within the Mojave Desert Planning Area (MDPA); and to implement the control measures contained in the Mojave Desert Planning Area Federal PM10 Attainment Plan. RULE 403.2 is applicable to the Lucerne Solar project due to its construction activities on Bureau of Land Management (BLM) land.

4.0 DUST CONTROL MEASURES IDENTIFIED BY RULES

During construction, the Lucerne Solar Project shall:

- Use periodic watering for short-term stabilization of Disturbed Surface Area to minimize visible fugitive dust emissions. For purposes of this Rule, use of a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes shall be considered sufficient to maintain compliance;
- Take actions sufficient to prevent project-related Trackout onto paved surfaces;
- Cover loaded haul vehicles while operating on Publicly Maintained paved surfaces;
- Stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than thirty days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate Visible Fugitive Dust emissions;
- Cleanup project-related Trackout or spills on Publicly Maintained paved surfaces within twenty-four hours (24); and
- Reduce non-essential Earth-Moving Activity under High Wind conditions. For purposes of this Rule, a reduction in Earth-Moving Activity when visible dusting occurs from moist and dry surfaces due to wind erosion shall be considered sufficient to maintain compliance.
- Provide Stabilized access route(s) to the project site as soon as is feasible. For purposes of this Rule, as soon as is feasible shall mean prior to the completion of Construction/Demolition activity;
- Maintain natural topography to the extent possible;
- Construct parking lots and paved roads first, where feasible;
- Construct upwind portions of project first, where feasible; and
- Apply dust palliative with low environmental toxicity such as, synthetic polymers like Soil Sement®, Soil Seal and Soilmaster™.

During operation when undergoing weed abatement activity, the Lucerne Solar Project shall not:

- Disrupt the soil crust to the extent that Visible Fugitive Dust is created due to wind erosion.

5.0 ADDITIONAL DUST CONTROL MEASURES

5.1 RESIDENTIAL AREAS AND HIGHWAYS

Dust will be controlled so that impacts to adjacent residences are kept to a minimum at all times. Fugitive dust emissions near residential areas will be controlled either by the application of water on the construction right-of-way and access roads, by water and tackifier on topsoil and spoil piles, speed control on exposed surface areas, and the mechanical covering of exposed piles with plastic or other wind-resistant covers.

6.0 SAFETY MEASURES FOR DUSTY CONDITIONS

In areas adjacent to highways where dust could cause poor visibility, grading activities will be restricted to prevent unsafe conditions. Restrictions may include applying water as close to earth-moving equipment as possible, slowing the speed of construction equipment, spacing equipment further apart, increased traffic control, or shutting down operations. Lucerne Solar will coordinate with the California Highway Patrol to ensure adequate traffic control measures are in place, including the possibility of using flaggers to control traffic if extreme low visibility conditions develop.

7.0 MONITORING AND RECORDKEEPING

Environmental Inspectors will be primarily responsible for monitoring and enforcing the need for dust control. The contractor will implement dust control as specified above, and the Environmental Inspectors will be responsible for making sure that dust control is effective and recorded.

8.0 RESPONSIBLE CONTACT

The following individual(s) are responsible for the preparation, submittal, and implementation of this Dust Control Plan.

Project Name: Lucerne Solar Project

Timothy Veale		Manager, EPC Services, Renewable Energy Chevron Energy Solutions Company
Print Name		Title
Signature		Date
(626) 304-4704	(626) 304-4710	(626) 644-3554
Phone Number	Fax Number	Cell Number